ARJO

MAXI MOVE™

Maintenance and Repair Manual

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July 2008

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Table of Contents

Safety Instructions 5
General 5
Product and Technical Description 6
Introduction 6
Features 6
Combi Feature 6
Risk Assessment Checklist for Engineers 7
Suggested Tools 8
Recommended Spares 8
Loctite Application 9
Torque Data and Consumable Materials 10
Preventive Maintenance Schedule 12
Service Procedures 17
Procedures not Included in the PMS 17
Service Procedure 1 18
Check that the latest updates have been implemented 18
Service Procedure 2 19
Check the battery 19
Battery test 19
Check the battery charger 20
Service Procedure 3 21
Check all vital parts for corrosion and damage 21
Painting 21
Service Procedure 4 22
Full Feature Test 22
Service Procedure 5 23
Safe Working Load Test (local Requirement) 23
Service Procedure 6 26
Scale Calibration Check 26
Verified Scale 26
Verified Scale and Non-Verified Scale 26
Service Procedure 7 27
Wheel Replacement 27
Front 27
Back 28
Service Procedure 8 29
Changing the Leg Assembly/Actuator 29
Chassis opening 29
Legs 29
Legs Actuator 29
Reassembly 30
Service procedure 9 31
Legs opening adjustment 31
Verification 31
Adjustment 31
Service Procedure 10 32
Control box (PCB, Fuse, Switch, Keypad) 32
Opening the Control box 32
Fuse change 32
Main board changes 32
DIP Switch Settings 34
Configuration procedure 34
Changing the Brake board 36

Table of Contents

Changing the Switch 36
Closing the control box 37
Service Procedure 11 39
Replacing the Handset 39
Service Procedure 12 40
Replacing the Maxi Move Strap 40
Strap removal 41
Top Cover reassembly 44
Verification 45
Service Procedure 13 46
Replacing the Mast Actuator 46
Removing the Mast 46
Removing the Actuator 47
Installing the Mast 48
Service Procedure 14 49
Replacing/Adjusting the Handle 49
Removing the Handle 49
Replacement 50
Adjustment 50
Service Procedure 15 51
Changing the Limit Switch 51
Anti-crush / Lower Limit 51
Upper limit 52
Service Procedure 16 54
Slider Adjustment Replacement 54
Adjusting Sliders 54
Upper slider 54
Lower slide 55
Replacing Sliders 55
Service Procedure 17 56
Jib / Jib roller / Jib cover 56
Jib removal 56
Jib Reinstallation 56
Jib roller change 56
Changing the Jib Top Cover 57
Service Procedure 18 58
Combi Attachment 58
Inspection 58
T-Bar removal 59
T-Bar installation 59
Service Procedure 19 6..... 0
Scale Removal/Installation 60
Removing the Scale 61
Installing the Scale 61
Service Procedure 20 62
Combi Spreader Bars 62
Stretcher 62
Four-Point DPS Pivot Point 63
Four Point DPS (Combi) 63
Four-Point Powered DPS Spreader Bar 64
Sling Checks 66

Safety Instructions

General

A. ARJO strongly advise that only ARJO designated parts, which are designed for the purpose, should be used on equipment and other ARJO supplied appliances to avoid injuries attributable to the use of inadequate parts. ARJO's conditions of sale make specific provision confirming no liability in such circumstances. Our policy is one of continuous development, and we therefore reserve the right to change specifications without notice.

B. Unauthorized modifications on any ARJO equipment may affect its safety and are in breach of any warranty on it. ARJO will not be held responsible for any accidents, incidents or lack of performance that occur as a result of unauthorized modifications to its products.

C. If the terms listed below are used in the text their meaning is as follows:

DANGER
Means: Electrical hazard warning, failure to understand and obey may result in electrical shock.

WARNING
Means: Failure to understand and obey may result in injury to you or to others.

CAUTION
Means: Failure to follow these instructions may cause damage to all or parts of the system or equipment.

NOTE
Means: This is important for the correct use of this system or equipment.

D. Dangerous substances. If using hazardous substances be sure how to handle these and refer to applicable information. In doubt refer to the local authorities for health and safety requirements.

Product and Technical Description

Introduction

The Maxi Move is a mobile patient lifter and is used for transferring patients from bed or chair to the toilet or bath. The floor lift has a maximum safe working load (SWL) of 227 kg (500 lb).

NOTE: The SWL will depend on the lift's configuration and attachments. Always refer to the maximum SWL of the lowest rated attachment.

Each Maxi Move is supplied with two 24V rechargeable batteries and a charging unit.

Features

The features of the Maxi Move floor lift include:

- Immediate stop/reset switch
- Overload circuit
- Overload current limit protection in the PCB
- Upper limit switch
- Lower limit switch/anti-crush
- Control panel on the unit
- Emergency manual wind down
- Handset LCD display
- Audible low-battery warning

The raising and lowering mechanism comprises an electromechanical linear actuator powered by a 24VDC motor.
The leg opening and closing mechanism comprises a 24VDC motor and a double-ended actuator (legs open independently).

Combi Feature

The Maxi Move with the 'Lock & Load' (combi attachment) has the facility to accommodate:

- A two-point spreader bar for use with a loop sling to support patients with contracted (restricted movement) or 'windswept' (deformed) limbs and walking slings.
- A two-point loop small.
- A two-point loop medium.
- A four-point loop large.
- A four-point spreader bar Dynamic Positioning System (DPS) for general lifting (small, medium and large).
- A 4 point powered spreader bar Dynamic Positioning System (DPS) for general lifting (medium and large).
- A stretcher system for handling dependent, fragile patients with a minimum of disturbance (SWL 160kg (350 lb)).

Product and Technical Description

Risk Assessment Checklist for Engineers

WARNING: IF IN DOUBT, CONTACT YOUR LOCAL ARJO REPRESENTATIVE. DO NOT TAKE UNNECESSARY RISKS.

The following assessment MUST be made before carrying out servicing, repair work or installations:

- Make sure the work area is adequately sized, suitably lit and at a reasonable temperature.
- The floor surfaces must be free from clutter, unevenness and non-slip.
- Use good engineering and manual handling practices to keep risk of injury at its lowest level.
- Tools and equipment must be kept in good condition.
- Wear protective clothing and eye protection where necessary.
- You should be adequately trained to perform the task.
- Do not manually lift items that could cause personal injury, that is too heavy, hot or sharp.
- You must comply with all local site safety rules, report any incident or accident to the site safety supervisor or equivalent. Use the ARJO reporting procedure.
- If necessary use Hard Surface Wipes (Alcohol Impregnated) to decontaminate a machine before carrying out any work.

NOTE: The above wipes should be of the type that has proven bactericidal action for disinfecting hard surfaces against MRSA & E.COLI.

- Load tests must only be applied as instructed in the relevant procedure.
- If it is necessary to work from a platform (i.e. scaffold, ladders etc.) to perform a service or installation task make sure the platform is secure and suitable for the task.

DANGER – Electrical Shock can kill.

- Do not perform maintenance tasks on equipment with ‘live’ electrical connections unless absolutely necessary.
- Isolate the power supply before removing plugs, sockets or disconnecting cables.
- Be alert at all times to the dangers of working on electrical equipment that operates on mains supply voltage. Where possible, visually inspect electrical cables and plugs etc. for damage or deterioration before working on equipment.
- Dispose of all waste in appropriate containers.

Product and Technical Description

Suggested Tools

- Standard tool kit.
- Special Tool ST252.
- 2 x 20kg weights ST219.
- Socket Allen key: (4mm ST82) (5mm ST274) (6mm ST55) (8mm ST87).
- Drift ST288.
- Ball-end Allen key (4mm) ST292.
- Starlock Washer Installation Tool (ST295).
- Sling Clip Gauge ST331.
- Load Test Equipment: refer to Section 11.0.

Recommended Spares

Refer to PARTS LIST 001.25070.EN

NOTE: This manual is intended to be used in reference to the Maxi Move manufactured in Canada (Serial number KMCXXXXX).
For the Maxi Move manufactured in the UK or in Sweden, please refer to:

09.MKM.00/3GB

Product and Technical Description

Loctite Application

Refer to the manufacturer instructions on the container before use, in addition to the following information:

Procedure for the correct use of Loctite 242 and Loctite 243 (Colour blue) Threadlocking:

- Clean both of the joint faces with Loctite 7063 Cleaner or a lint-free cloth moistened with Acetone or another suitable volatile solvent.

NOTE: Because Loctite 243 is oil-tolerant, it is not necessary to meet the same standard of oil-free cleanliness as for Loctite 242.

- Apply Loctite 243 sparingly but sufficient to fill all engaged threads. (This product performs best in thin bond gaps [0.05 mm]).
- Install the threaded components and where known, torque to the applicable torque figure. If the torque figure is not known tighten to a firm fixing.
- Clean off any unwanted adhesive.
- Allow the Loctite 243 to cure before subjecting to load.

NOTE: The cure time will depend on the materials used, the ambient temperature and the bond line gap.

- Where the cure speed is unacceptably long, or large gaps are present, applying Loctite Activator ‘N’ or ‘T’ to the surface will improve the cure speed.

For general Loctite specifications and application details: refer to Loctite manufactures instructions.

Torque Data and Consumable Materials

Thread retaining: Apply Loctite 243 when no threadlocking patch has been pre-applied. When replacing a part with pre-applied threadlocking, the part should be replaced by a new part using pre-applied threadlocking.

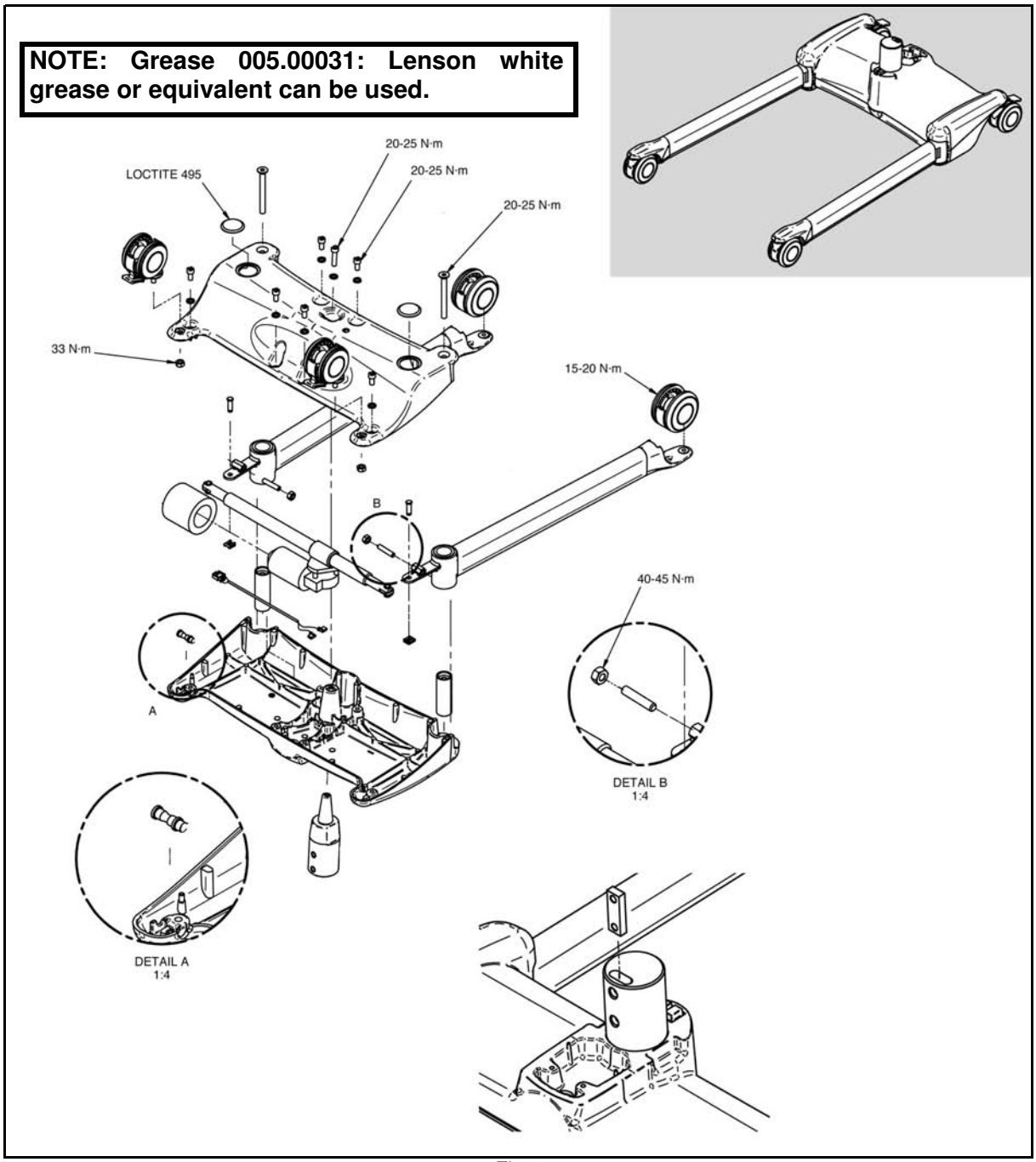


Fig.1

Product and Technical Description

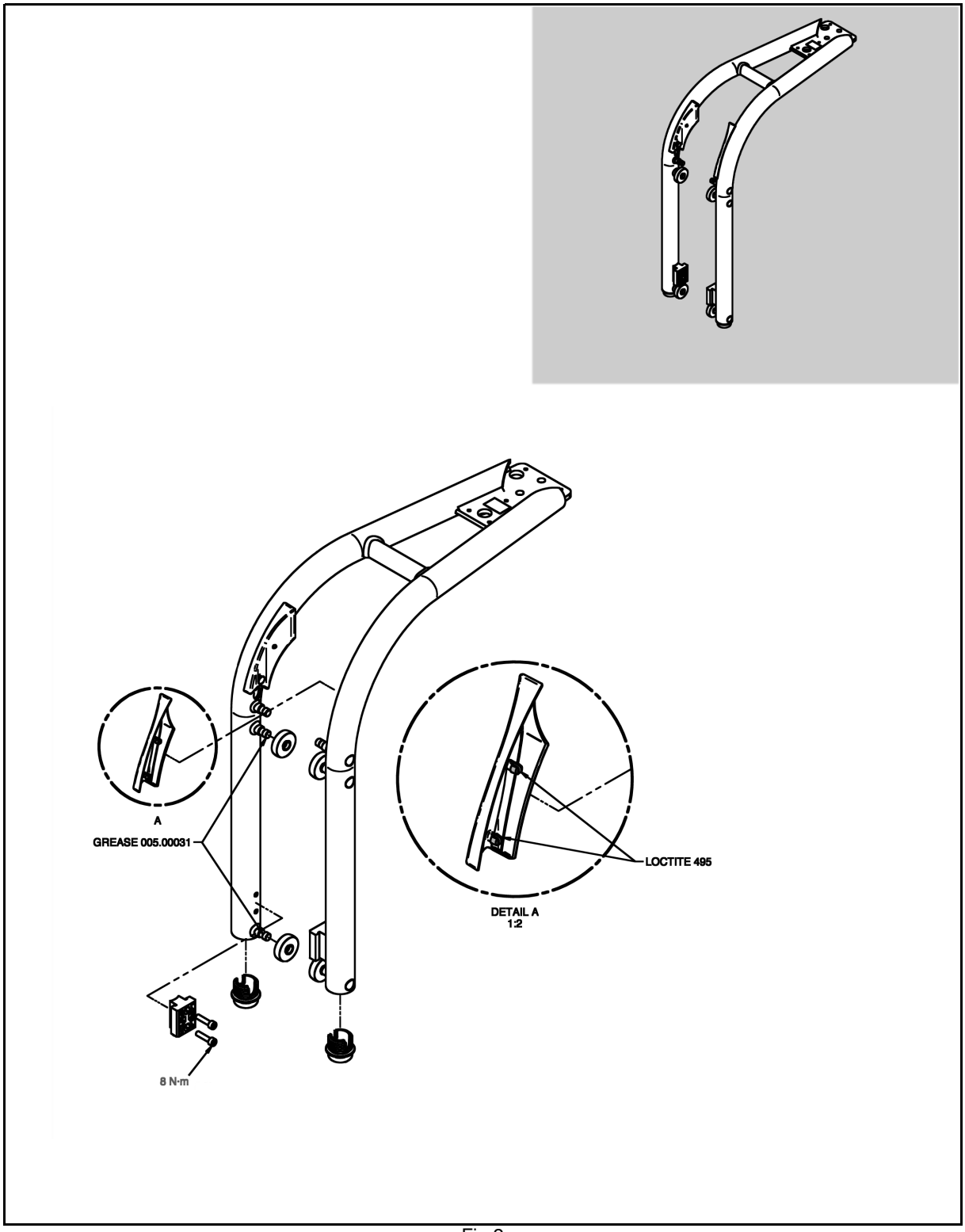


Fig.2

Preventive Maintenance Schedule

Action	DPS Spreader Bars								Loop Spreader Bars							
	Manual				Powered				2-4 Point				Stretcher			
	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years
Visually inspect the condition of all sling attachment points for damage. If any is found, replace with new unit.		**X**				**X**				**X**				**X**		
Make sure all instruction labels are attached and readable. Replace as required. See "Operating Instructions" for location of labels.		**X**				**X**				**X**				**X**		
Check the condition of the friction discs and bushes within the pivot points. If found worn and/or damaged, parts must be replaced.			**S**				**S**									
When the friction discs and bushes have been checked/replaced, reset friction assembly to support a 5.4 kg (12 1b) load at the handle.			**S**				**S**									
Visually inspect all external parts, making sure no damage has occurred during use. Replace parts as required.			**S**				**S**									
Make sure the unit can be powered through the full range smoothly.							**S**									
Examine all exposed parts, especially where there is close contact with the patient's body. Make sure no cracks or sharp edges have developed that could cause injuries or become unhygienic. Replace where necessary.		**X**	**S**			**X**	**S**			**X**	**S**			**X**	**S**	

KEY: **X** = Action required on the part of the customer **S** = Action required on the part of a qualified service technician

Preventive Maintenance Schedule

Action	DPS Spreader Bars								Loop Spreader Bars							
	Manual				Powered				2-4 Point				Stretcher			
	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years
Inspect the condition of the leaf spring and locking clip at the attachment point. Replace if damaged.		**X**		**S**												
Visually inspect that the spreader bar correctly installs on the jib, i.e. that the plastic clip latches into the groove on the "T" part on the jib.	**X**				**X**				**X**				**X**			
Visually inspect to make sure the leaf spring within the locking clip is correctly installed.		**X**				**X**				**X**				**X**		

Action	Maxi Move				Accessories							
					Slings				Battery Charger			
	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years
Examine for damage/fraying to sling, straps and clips; replace as required.					**X**		**S**					
Visually examine the battery charger for loose connectors, cut wires, damaged casing etc. Do not use if damaged in any way.									**X**		**S**	

KEY: **X** = Action required on the part of the customer **S** = Action required on the part of a qualified service technician

Preventive Maintenance Schedule

Action	Maxi Move				Accessories							
					Slings				Battery Charger			
	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years
Make sure the battery is in a good state of charge. See "Operating Instructions" for the battery charging procedure.	**X**		**S**									
Recharge battery for a minimum of 15 hours once every seven days. See "Operating Instruction's" for battery charging procedure.		**X**	**S**							**X**		
Operate the lift through its full range from both the control panel and the control handset in a normal and smooth manner.		**X**										
With the jib in the fully lowered position, visually examine the exposed lifting straps on each side of the mast for any cuts or fraying. If damaged in any way, withdraw lifter from use immediately and have lift straps replaced with new ones.		**X**										
Open and close the chassis legs and check for full range of motion and smooth movement.		**X**										
Visually check the condition of the handset and its cable. If damaged, withdraw from service immediately and replace with new cable and handset assembly.		**X**										
Visually check that all external fittings are secure, and all screws and nuts are tight.		**X**										
Make sure all castors rotate freely and that the two rear brakes lock. Replace as required.		**X**										
Make sure all castor-mounting pins are tight on the chassis and chassis legs, and that the castor tread is not damaged. Replace as required.		**X**										
Make sure all instruction labels are firmly attached and readable. Replace as required. See "Operating Instructions" for location of labels.		**X**										

KEY: **X** = Action required on the part of the customer **S** = Action required on the part of a qualified service technician

Preventive Maintenance Schedule

Action	Maxi Move				Accessories							
					Slings				Battery Charger			
	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years
Examine all exposed parts, especially where there is close contact with the patient's body. Make sure no cracks or sharp edges have developed that could cause injuries or become unhygienic. Replace where necessary.		**X**										
Test the "Automatic Cut-out" function.			**S**									
Test the "Immediate Stop" facility.			**S**									
Mechanically test the "System Failure Wind Down" facility.			**S**									
Where a scale is installed, check the accuracy of the unit and recalibrate if required.			**S**									
Examine the two lifting straps over the entire length. Replace the straps if there is evidence of wear or damage.			**S**									
Perform a torque tightening check.			**S**									
Check the 2.5 kg force required to rotate the jib pivot. Adjust screw if required.			**S**									
Check the gap between the "T" piece flange and jib. If more than 2 mm, replace jib bushes (minimum gap is 1 mm).			**S**									
Verify the width of the legs. First, remove the leg covers. With the legs closed, measure centre to centre at the ends near the front castors. Adjust only if dimension "A" is shorter than 650 mm (25 1/2").			**S**									

KEY: **X** = Action required on the part of the customer **S** = Action required on the part of a qualified service technician

Preventive Maintenance Schedule

Action	Maxi Move				Accessories							
					Slings				Battery Charger			
	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years	Before Every Use	Every Week	Every 12 Months	Every 2 Years
It is recommended to replace the two lift straps every 2 years if they are used. If the straps appear damaged or worn before then, replace the straps immediately. Lubricate the two top strap rollers.				**S**								
Check and lubricate the upper and lower mast sliders. Replace if worn or damaged. If necessary, adjust to remove excessive gap in the column.				**S**								
Check and replace as necessary the 4 off jib rollers and 2 off guide blocks if they show signs of wear or damage.				**S**								
Check the combi “T” piece and attachment contacts if fitted. Clean and replace as required.				**S**								
Check the Usage Counter and reset if required.			**S**									

KEY: **X** = Action required on the part of the customer **S** = Action required on the part of a qualified service technician

Procedures not Included in the PMS

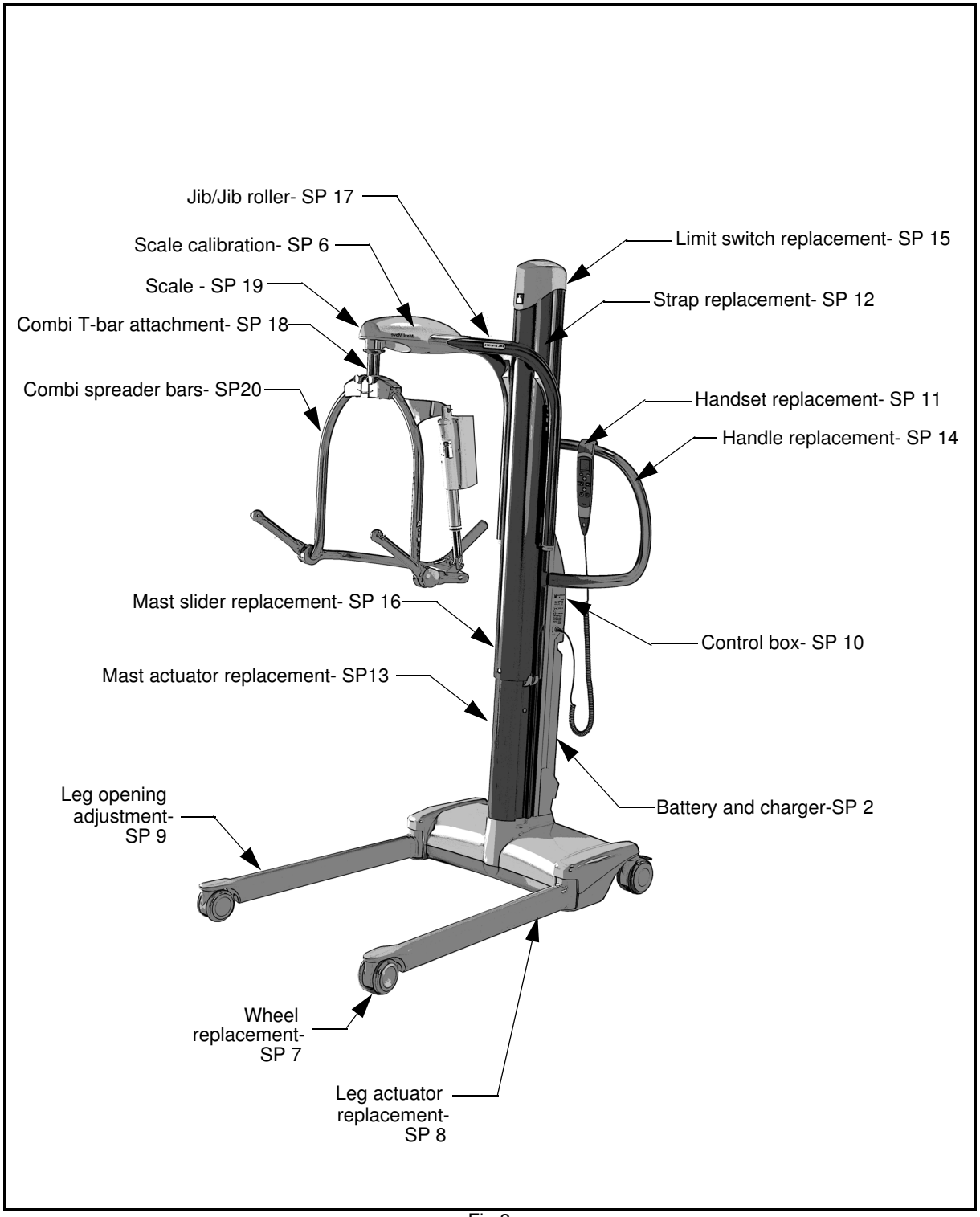

Jib/Jib roller- SP 17
Scale calibration- SP 6
Scale - SP 19
Combi T-bar attachment- SP 18
Combi spreader bars- SP20
Mast slider replacement- SP 16
Mast actuator replacement- SP13
Leg opening adjustment- SP 9
Wheel replacement- SP 7
Leg actuator replacement- SP 8
Limit switch replacement- SP 15
Strap replacement- SP 12
Handset replacement- SP 11
Handle replacement- SP 14
Control box- SP 10
Battery and charger-SP 2

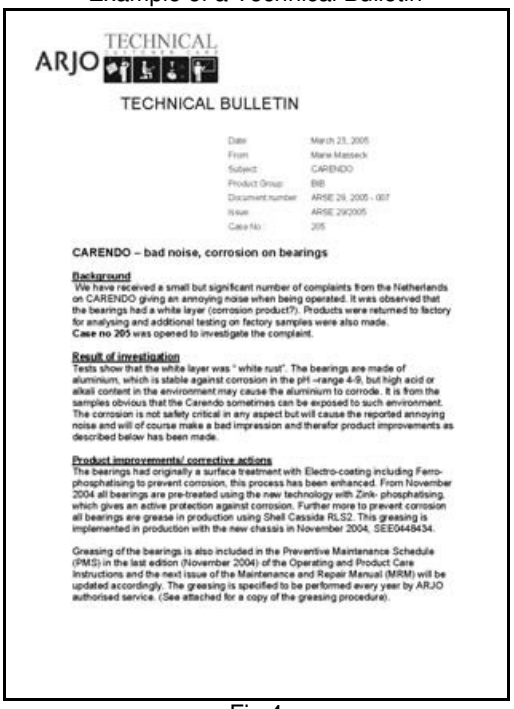
Fig.3

Service Procedure 1

Check that the latest updates have been implemented

- Check if there are any field correction bulletins, safety notices or technical bulletins that have been published since the last service. (These replace the previously used Technical Advice Notices (TAN) with status A (i.e. safety issue, requiring some form of recall) or B (non-safety issue).
- This verification must be done to keep the product up to date according to safety and product improvements. Bulletins and notices can be generated as a result of an engineering change note, a safety incident report or a change to form/fit etc.

Example of a Technical Bulletin



TECHNICAL

ARJO

TECHNICAL BULLETIN

Date	March 23, 2005
From	Marie Masseck
Subject	CARENDO
Product Group	BIB
Document number	ARSE 29, 2005 - 007
Issue	ARSE 29/2005
Case No	205

CARENDO – bad noise, corrosion on bearings

Background
We have received a small but significant number of complaints from the Netherlands on CARENDO giving an annoying noise when being operated. It was observed that the bearings had a white layer (corrosion product?). Products were returned to factory for analysing and additional testing on factory samples were also made.
Case no 205 was opened to investigate the complaint.

Result of investigation
Tests show that the white layer was " white rust". The bearings are made of aluminium, which is stable against corrosion in the pH –range 4-9, but high acid or alkali content in the environment may cause the aluminium to corrode. It is from the samples obvious that the Carendo sometimes can be exposed to such environment. The corrosion is not safety critical in any aspect but will cause the reported annoying noise and will of course make a bad impression and therefor product improvements as described below has been made.

Product improvements/ corrective actions
The bearings had originally a surface treatment with Electro-coating including Ferro-phosphatising to prevent corrosion, this process has been enhanced. From November 2004 all bearings are pre-treated using the new technology with Zink- phosphatising, which gives an active protection against corrosion. Further more to prevent corrosion all bearings are grease in production using Shell Cassida RLS2. This greasing is implemented in production with the new chassis in November 2004, SEE0448434.

Greasing of the bearings is also included in the Preventive Maintenance Schedule (PMS) in the last edition (November 2004) of the Operating and Product Care Instructions and the next issue of the Maintenance and Repair Manual (MRM) will be updated accordingly. The greasing is specified to be performed every year by ARJO authorised service. (See attached for a copy of the greasing procedure).

Fig.4

Service Procedures

Service Procedure 2

Check the battery

The battery power tester will load the battery with a high current (up to 60 A, depending on battery condition) for a short time and this will show the battery condition on a meter.

WARNING!
- **The battery power tester will become hot and there is a potential risk of fire.**
- **Make sure the battery power tester is kept away from inflammable material during tests and for several minutes following the test.**
- **Beware of touching the metal casing for several minutes following the test.**

Battery test

1) The battery to be tested must be charged for *at least 12 hours before test*.

2) Connect the tester to the battery. DO NOT operate the test switch! When the tester is connected, switch the test switch right or left for 1-2 seconds and take a quick reading on the meter.

3) The meter will show the battery's condition.

4) If the battery is OK, place the tested battery back in the charger.

Battery tester

Fig.5

Check the battery charger

700.24250

1) Connect the cable from the test rig to the charger.
   - Measure the voltage in the banana plug outlet of the rig. The voltage should be between 27.6 and 28 VDC.
2) Measure the current in the banana plug outlet of the rig.
   - Turn the knob until the amber led indicator starts blinking.
   - The current should now be between 0.9 and 1.1A.

Battery charger

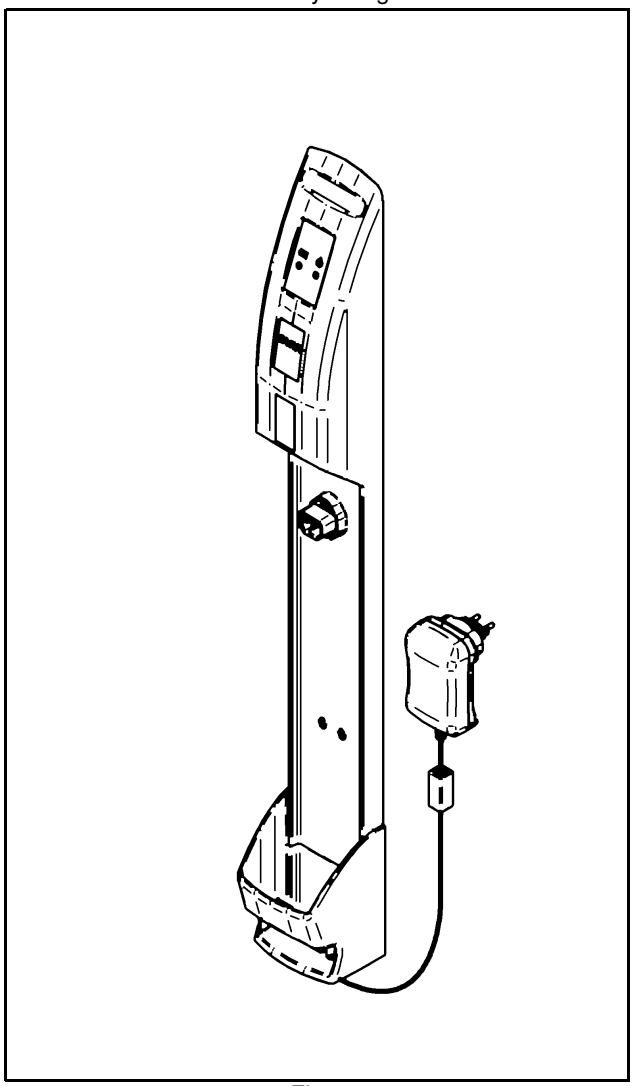


Fig.6

Service Procedures

Service Procedure 3

Check all vital parts for corrosion and damage

This verification will help preserve the safety and performance of the product.

To Verify:

1) Front caster
2) Legs
3) Braked caster
4) Chassis
5) Column
6) Battery
7) Control box
8) Handle
9) Handset
10) Strap
11) Jib
12) T-bar jib attachment
13) T-bar
14) DPS
15) DPS actuator
16) Clip attachment

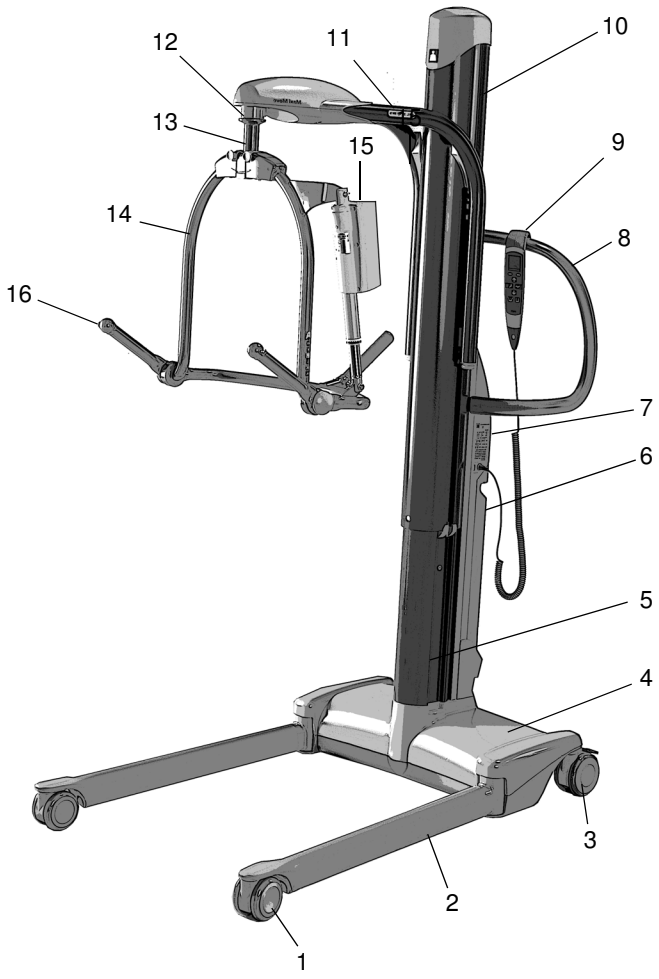


Fig.7

Painting

If the paint is damaged (scratches/marks), add paint in matching color to prevent further corrosion.

NOTE: Before applying the paint the surface must be clean and dry.

Service Procedures

Service Procedure 4

Full Feature Test

Function	Activation/ Validation	Actions	Criteria for approval
Lift up/down	Buttons	Full stroke up and down	No abnormal noises; unit reaches up/ down points as per specifications (see user manual)
Legs open/ close	Buttons	Full opening and closing	No abnormal noises; legs open fully on each side (see user manual)
DPS Sit/Recline	Buttons	Full stroke of DPS	No abnormal noises; DPS moves freely
Rotation and swiveling of casters	Manual	Move on short distance, rotating the lifter	No pulling, no abnormal noises or vibrations
Braked caster	Manual	Engage the brake on each rear caster	Easy engagement/disengagement; lift immobile when brakes are engaged
Handset	Buttons	Press each button, check display	All lift functions working; no display issues
Touchpad	Buttons	Press each button	All functions working normally
Emergency lowering devices	Manual	Use emergency lowering devices (see user manual)	Jib must lower as per user manual

Service Procedure 5

Safe Working Load Test (local Requirement)

WARNING: OBEY ALL RELEVANT SAFETY PRECAUTIONS.

1. Medium Powered and Non-Powered Dynamic Positioning System (DPS)

- Set up the ARJO Load Test Kit as shown and test to the Safe Working Load (SWL).
- Release the load and remove the load test equipment. Check the hoist for any permanent deformation or damage.

2. Loop Medium Two-Hook and Walking Jacket Two-Hook

- Set up the ARJO Load Test Kit as shown and test to Safe Working Load (SWL).
- Release the load and remove the load test equipment. Check the hoist for any permanent deformation or damage.

Medium Powered and Non-Powered DPS

Tool No.	Description	Qty
ST164	Handset and Load Cell	1
ST165	Load Test Strap (short)	2
ST171	Load Test Strap	2
ST239	Hinge Beam	1
ST240	Hook Bolt	1
ST243	Plunger Bracket	1

Medium Loop and Two-Hook
Walking Jacket (not illustrated)

Tool No.	Description	Qty
ST164	Handset and Load Cell	1
ST165	Load Test Strap (short)	2
ST166	Load Test Strap (long)	2
ST239	Hinge Beam	1
ST240	Hook Bolt	1
ST241	Load Cell Housing	1

Fig.8

3. Loop Small Two-Hook

- Set up the ARJO Load Test Kit as shown and test to Safe Working Load (SWL).
- Release the load and remove the load test equipment. Check the hoist for any permanent deformation or damage.

4. Loop Large Four Hook

- Set up the ARJO Load Test Kit as shown and test to Safe Working Load (SWL).
- Release the load and remove the load test equipment. Check the hoist for any permanent deformation or damage.

Small Loop

Tool No.	Description	Qty
ST164	Handset and Load Cell	1
ST165	Load Test Strap (short)	2
ST239	Hinge Beam	1
ST240	Hook Bolt	1
ST241	Load Cell Housing	1

Large Four-Hook Loop

Tool No.	Description	Qty
ST164	Handset and Load Cell	1
ST165	Load Test Strap (short)	2
ST166	Load Test Strap (long)	2
ST239	Hinge Beam	1
ST240	Hook Bolt	1
ST241	Load Cell Housing	1

Fig.9

5. Large Powered and Non-Powered Dynamic Positioning System (DPS)

- Set up the ARJO Load Test Kit as shown and test to Safe Working Load (SWL).
- Release the load and remove the load test equipment. Check the hoist for any permanent deformation or damage.

6. Combi Stretcher Frame and Strap Stretcher

- Set up the ARJO Load Test Kit as shown and fill the 6 x 25 liter water containers (part of ST120) with water and test to 160kg.

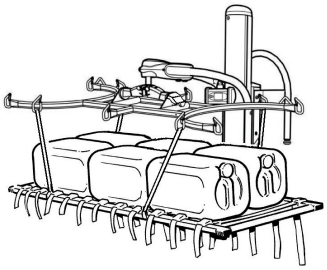
NOTE: The six water containers filled with water equal the SWL of 160kg.

- Maintain the load for a period of 5 minutes. During this period move the containers to ensure that all cross straps are tested.
- Remove the containers and visually check the strap stretcher and associated details for any signs of deterioration. We recommend replacing any defective parts.
- Record the frame's condition and any recommendations on service paperwork and obtain the customer signature.
- Affix the completed ARJO adhesive service label to the hoist and leave a copy of the paperwork, including the load test certificate, with the customer.

Large Powered and Non-Powered DPS

Tool No.	Description	Qty
ST40	Load Frame & Straps	1
ST164	Handset and Load Cell	1
ST165	Load Test Strap (short)	2
ST239	Hinge Beam	1
ST240	Hook Bolt	1
ST241	Load Cell Housing	1

Combi Stretcher Frame and Strap Stretcher



Tool No.	Description	Qty
ST120	Water Barrel	6

Fig.10

Service Procedure 6

Scale Calibration Check

Verified Scale

Official scale calibration verification or re-verification should be take care by an approved organization in accordance with the standards stipulated by local authorities (as specified by each country). If a calibration is necessary on a verified scale, the new calibration will break the verification seals and will require a new verification by an approved organisation.

Verified Scale and Non-Verified Scale

If your test weights require hooks or chains, place them on the scale before powering up the lifter. The scale will automatically zero itself at start-up.

Lift your test weights with the hooks or chains.

While in service calibration, the tolerance for a weight “m” is:

2 kg < m 50 kg: ± 0.1 kg
50 kg < m 200 kg: ± 0.2 kg
200 kg < m 227 kg: ± 0.3 kg

If any results are measured to be out of those tolerances, the scale should be disqualified and be re-calibrated. Contact your manufacturer for more details.

Service Procedures

Service Procedure 7

Wheel Replacement

NOTE: KMCS model needs 100 mm front casters and KMCL** model needs 86 mm casters.**

Front

1) Place the Maxi Move on its handles, with the legs pointing upward.

2) Remove the bolt that holds the caster assembly using an 8 mm Allen key. The wheel of the caster cannot be dismantled. The caster must be changed.

3) Before installing the caster, check the integrity of the aluminum thread in the leg tip. If worn, do not reinstall the caster and change the legs. Install the new caster by using the new bolt that came with the caster. Do not overtighten the bolt!

NOTE: Carefully place the caster component in the correct order (see picture)

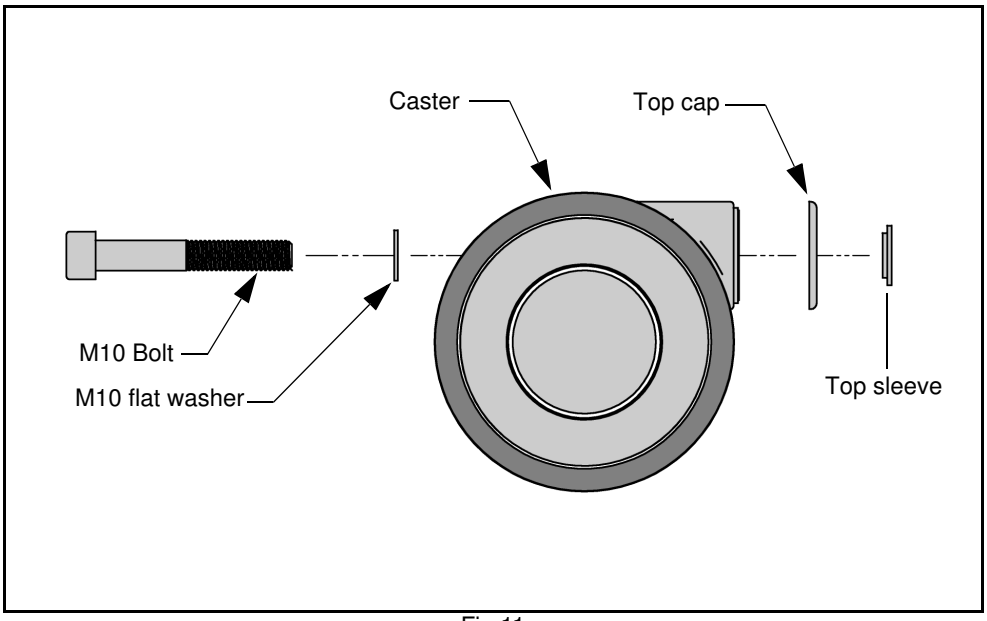


Fig.11

4) Check that the caster spins freely over the bolt.

Back

1) Place the Maxi Move on its handles, the legs pointing upward

2) Remove the self-locking nut under the caster using a 13 mm socket and pull back the caster

3) Reinstall the caster.

NOTE: Carefully place the caster components in the correct order (see Fig.11). The self-locking nut can be reused.

Check that the caster spins freely over the studs and that the break mechanism is working properly.

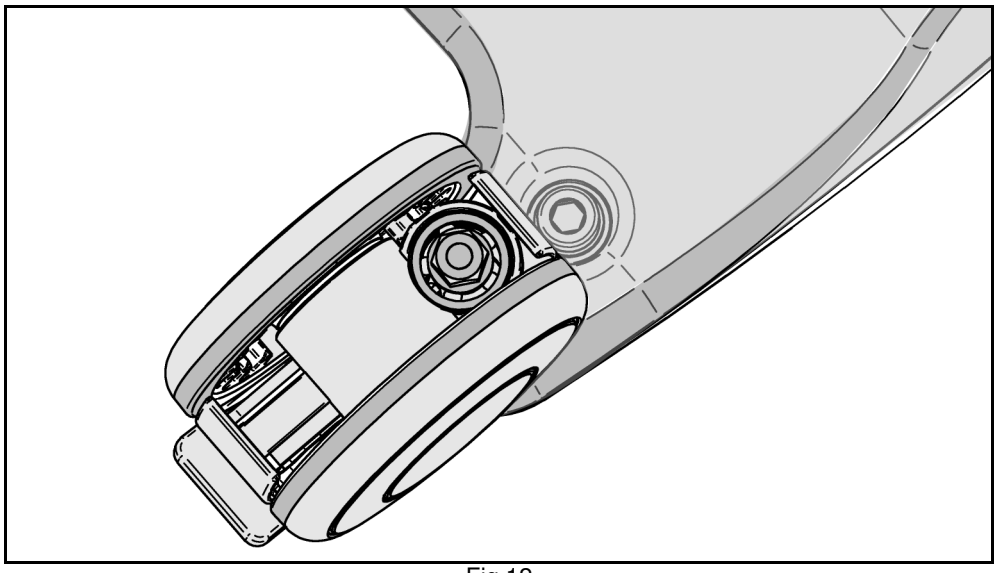


Fig.12

Service Procedure 8

Changing the Leg Assembly/Actuator

Chassis opening

1) Slightly open the legs of the Maxi Move, to remove the pressure over the mechanical stop in the chassis. Failure to do so will prevent the base from opening.

2) Place the Maxi Move on its handles. Place an object under the battery holder to raise the chassis, so that no part of the chassis touches the ground.

3) Remove all the bolts located under the chassis.

4) Pull on the chassis lower part and carefully pull it out.

Legs

1) Detach the safety clips that retain the pin in the leg and the actuator. Be careful that neither the legs nor the actuator falls sideways, since they are no longer secured.

2) Carefully pull out the legs from the pivot.

3) Install the caster (see SP 7) over the new legs. Install the adjustment nut and the self-locking nut as well.

4) Inspect the pivot assembly and the actuator pin. If you spot signs of excessive wear, replace them for new ones. The dowel pin over the pivot fits inside the hole of the chassis.

5) Carefully put back the new legs over the pivot pins. Attach the actuator and the legs with the corresponding pins. Put back the safety clip.

Legs Actuator

1) Remove the two clips and the two pins that retain the actuator.

CAUTION: The legs will fall sideways when they are disconnected from the actuator.

2) Unplug the actuator and plug in the new actuator

3) While holding the actuator in place, replace the pin and the clip onto the new actuator.

NOTE: the actuator must be in the oriented correctly (see picture).

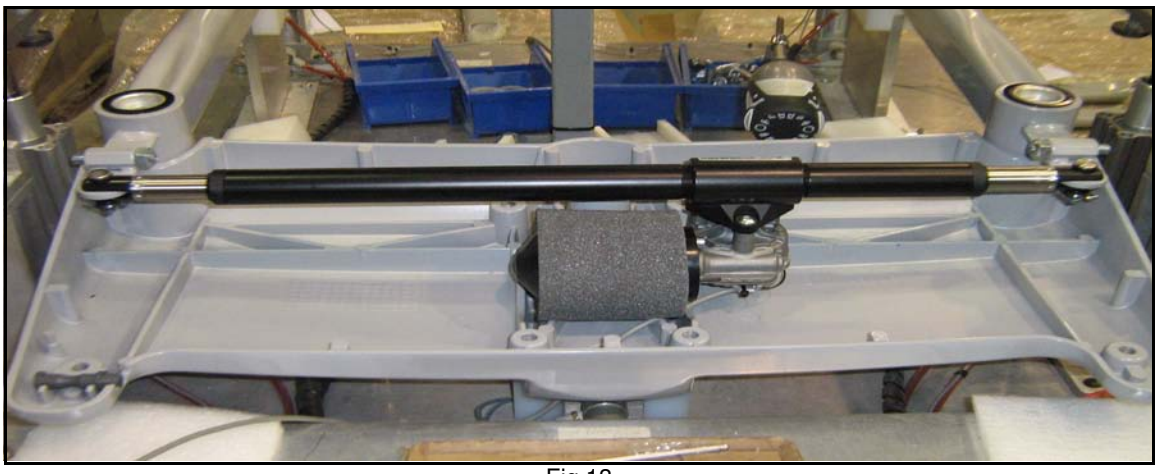


Fig.13

Reassembly

1) Reinstall the cover and the nut. You may need to adjust the legs slightly to be able to slide the cover back on.

NOTE: The 40 mm (1 1/2") bolt must be used for the mast link attachment. DO NOT over- torque. Check that the cover fits without any gaps over the upper chassis.

2) Leg opening must be verified/adjusted after the installation. Refer to SP 9.

3) Following the installation, move the lift forward and backward to verify that the unit travels freely without a tendency to pull to the side.

4) Fully open and close the legs. The legs must move freely.

5) Perform a safe working load (SWL) test. See SP 5 (Local requirement).

Service procedure 9

Legs opening adjustment

Verification

1) Close the legs using the button located on the control panel.

2) Place the Maxi Move on its handle.

3) Measure the distance according to Fig.14. If the dimensions are out of tolerance, the legs must be adjusted.

Adjustment

1) Remove the two caps under the chassis with a flat screwdriver

2) Loosen the locknut. Turn the setscrew to adjust the legs to the correct dimensions. It might be necessary to open or close the legs to remove pressure on the setscrew during the adjustment (clockwise turn=closing legs, counterclockwise turn=opening legs).

3) Replace the caps under the base. Use Loctite instant adhesives to fasten the cap.

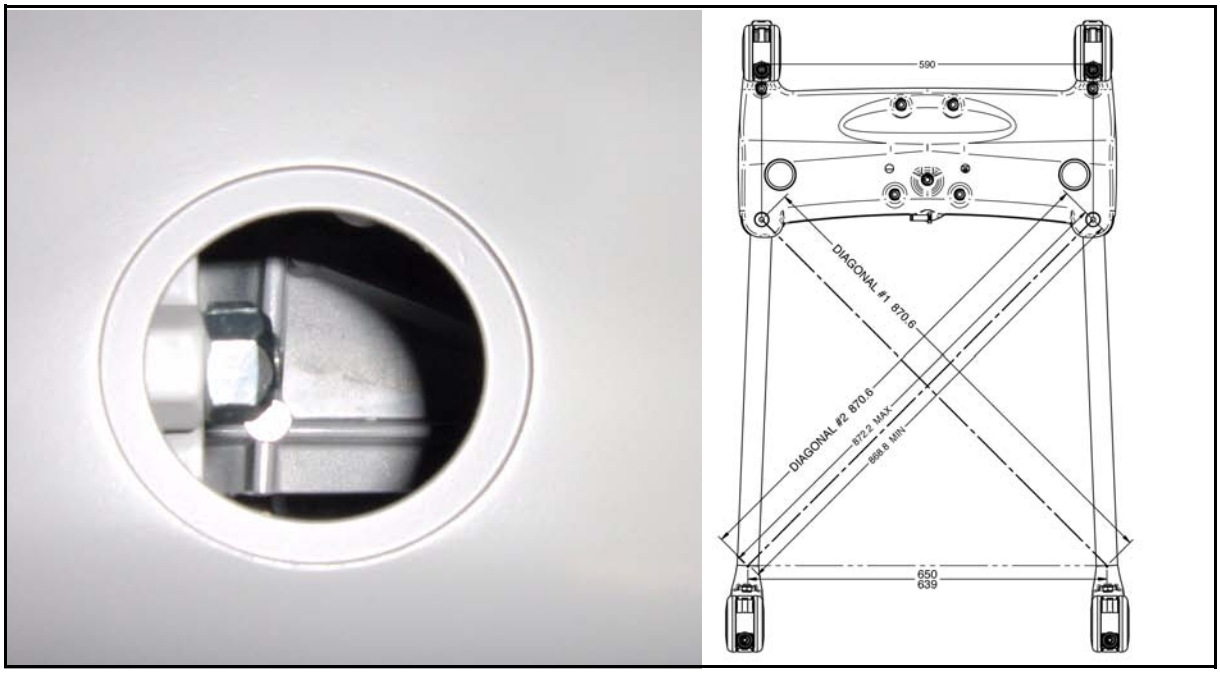


Fig.14

Service Procedure 10

Control box (PCB, Fuse, Switch, Keypad)

Changing the PCB or the fuse in the fuse holder requires that the control box be opened.

Opening the Control box

1) Remove the battery

2) Remove the control box cover's 4 Torx screws.

3) Lift the control box up approx. 10 mm (3/8") vertically to disengage it from the clip holding it to the mast.

4) Carefully lower the control box.

Fuse change

Locate the fuse holder and open it by simultaneously pushing and twisting the two parts. If the fuse is blown, replace it by an equivalent 15 A fuse (UL or CSA approved).

Main board changes

NOTE: Use appropriate ESD protection when manipulating the PCB.

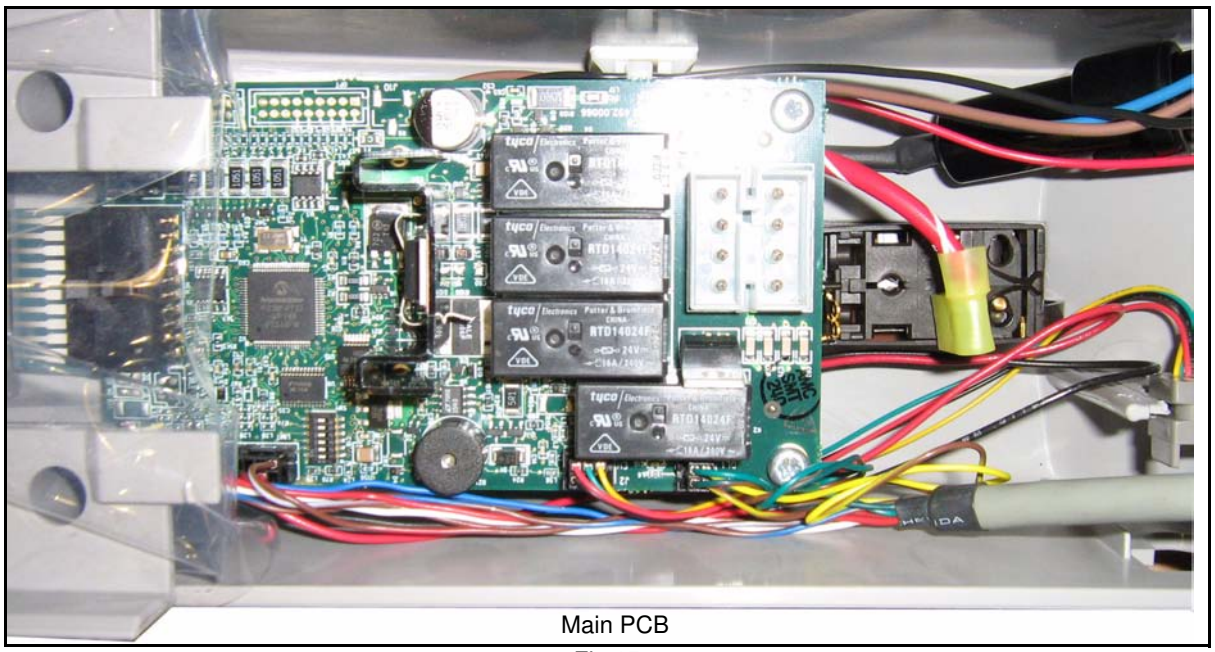
NOTE: The clear plastic that protects the PCB is for the IPX4 water protection. DO NOT REMOVE IT. You can secure it with an elastic band to get access to the PCB. Also, do not remove the screw on the upper part of the control tower. There is a silicone seal between the two parts. If the parts should be separated, a new silicone seal must be applied (see attached picture).

1) Unplug all connectors going to the PCB.

2) Remove the 4 screws that secure the PCB. Remove the PCB.

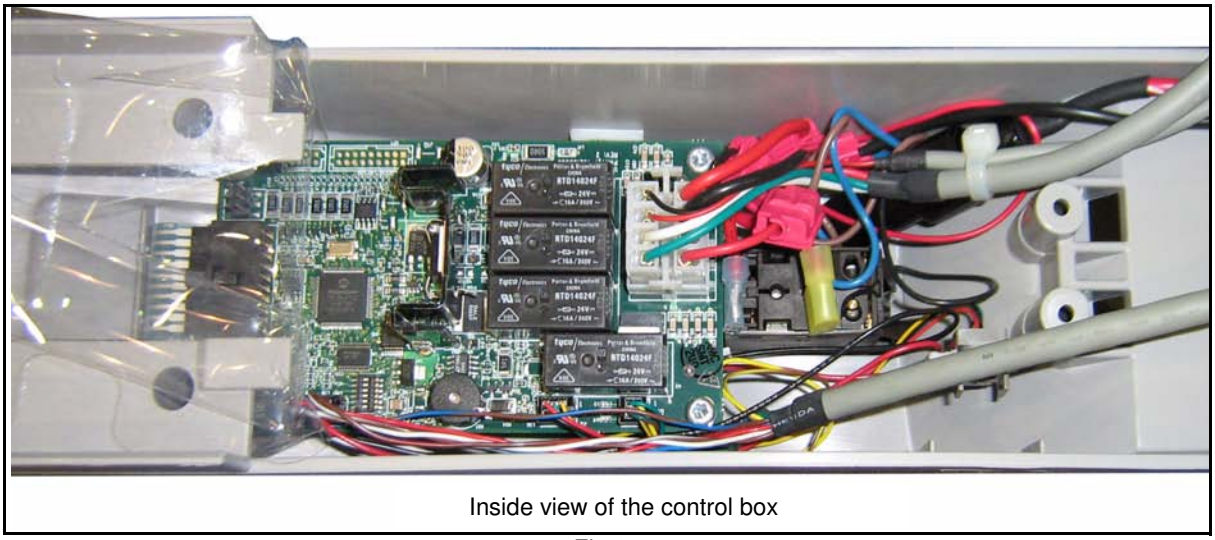
3) Replace with a new PCB. Plug in all connectors. Ensure that the connector polarity is respected.

4) Replace the 4 screws that secure the PCB. DO NOT over-torque the screw, this may damage the PCB.



Main PCB

Fig.15



Inside view of the control box

Fig.16

DIP Switch Settings

The 492.00066 PCBA is, by default, configured in a safe state that limits the operation of the hoist. However, the 492.00066 can be configured by positioning a set of on-board DIP switches. The DIP switches use a binary configuration scheme.
The procedure in this document shows how to properly set the switches according to the hoist in which the circuit is to be installed.

NOTE: This procedure does not cover any safety testing that must be performed after the installation of the PCBA into the hoist.

Configuration procedure

1) Identify the PCBA assembly based on model number 492.00066-XX, where XX identifies the specific assembly.
2) Locate switch SW1 on the TOP side of the PCBA (see Fig.17).

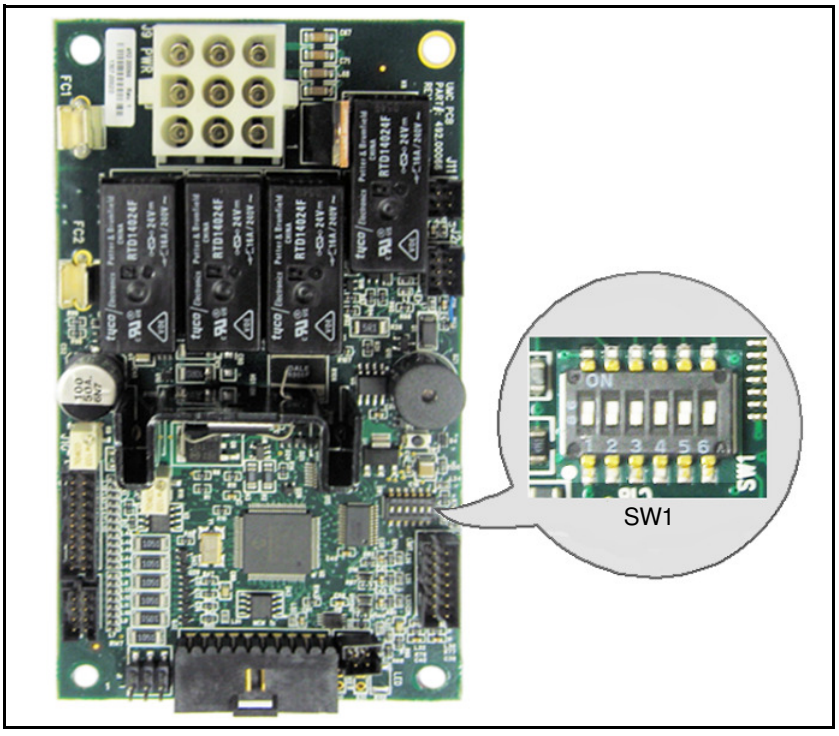


Fig.17

3) Position the switches according to the PCBA part number in Fig.18.

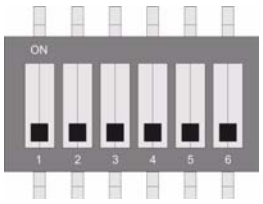
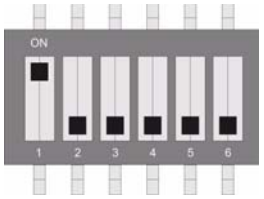
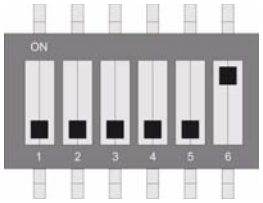
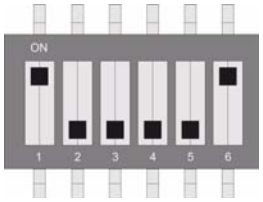
PCBA CONFIGURATION TABLE			
PCBA Assembly Part Number	**PCBA Description**	**Switch Position (visual)**	**Switch Position Number**
492.00066-01	PCBA IMF Maxi Move STANDARD JIB		01
492.00066-02	PCBA IMF Maxi Move EXTENDED JIB		02
492.00066-33	PCBA IMF Maxi Move EUROPEAN STANDARD JIB		03
492.00066-34	PCBA IMF Maxi Move EUROPEAN EXTENDED JIB		04

Fig.18

4) Tests must be performed to verify that the correct DIP switch selection has been made. Either one of the following methods will suffice:

- Connect an LCD hand control unit (Part #700.13700) to the 492.00066.XX PCBA. At power up, the LCD hand control screen will display the existing DIP switch configuration. Refer to the table in Fig. 2 to make sure that the displayed setting is correct.
- Conduct a visual inspection of the DIP switches to make sure that the switches were positioned properly according to the PCBA part number.

5) Apply glue or a tamper proof sticker on the DIP switches to preserve the configuration and identify the PCBA assembly accordingly.

Service Procedures

Changing the Brake board

1) Remove main PCB (see above).

2) Disconnect all connectors to the brake board.

3) The PCB is attached with double side tape. Remove it by pulling on it.

4) Take the new PCB and pull back the liner on the double side tape.

5) Attach the PCB on the bottom off the control tower. Reconnect all the wires.

6) Reinstall the main pcb.

Brake board

Fig.19

Changing the Switch

1) Unplug the switch connector.

2) Pry the tab behind the switch and pull it out of the control box

3) Insert the new switch in place.

4) Pry the plastic tabs on the side of the switch to hold it in place

5) Connect the wires back to the switch

6) Fix the bezel over the switch with Loctite instant adhesive. The higher side of the bezel must be over the green button of the switch.

Closing the control box

(See Fig.20, on next page)

1) Place the clear plastic film carefully over the board.

2) Insert the base of the control box inside the battery bucket

3) Carefully place the wires. Be sure to not pinch the wire behind a screw or on the edge of the control box.

4) Push the control box over the backplate.

5) The two-prong on the control box locks into the slot on the handle. Once the control box is well fitted over the backplate, slide it down completely (approx. 10 mm [3/8”]).

6) Check that the gap between the control box and the backplate is consistently small. A bigger gap means that some wires are pinched behind the control box.

7) Replace the the 4 Torx screws.

8) Put back the battery, turn on the Maxi Move and perform a functional test (see SP 4)

Fig.20

Service Procedure 11

Replacing the Handset

1) Remove the battery

2) Using a small flat screwdriver or similar tool, open the handset door by prying on the tabs.

3) Slide the handset cable's grommet from the control box.

4) Use the flat screwdriver to press on the the telephone jack's release tab located on the handset cable inside the control box. Pull out the connector.

5) Plug the new handset and attach the grommet inside the slot on the control tower.

6) Replace the door of the handle. Be sure the door locks back in place

7) Put back the battery, turn on the lift and perform a functional test (SP 4).

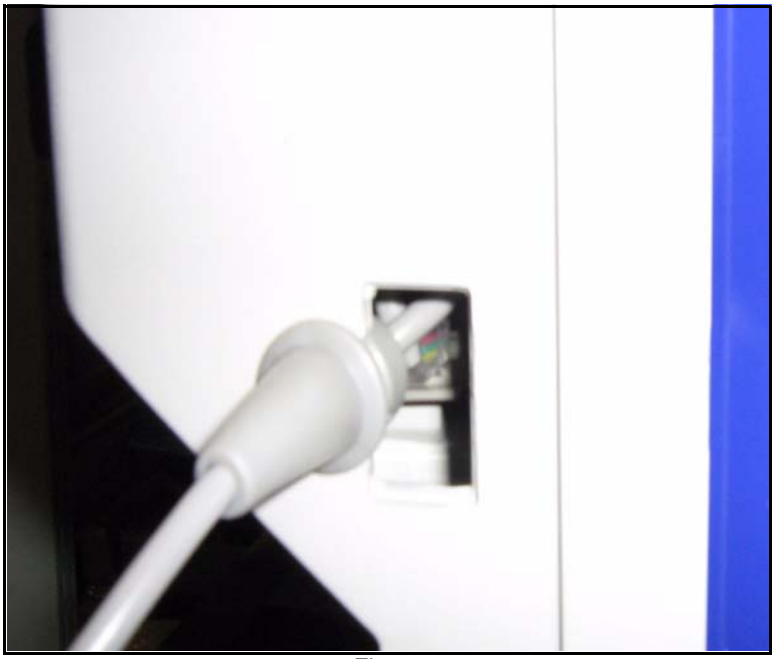
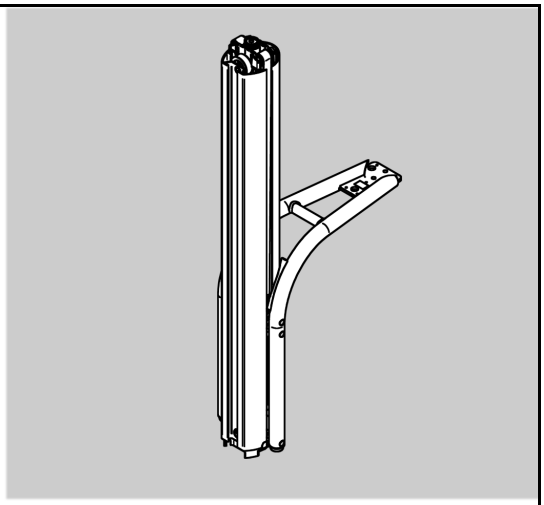


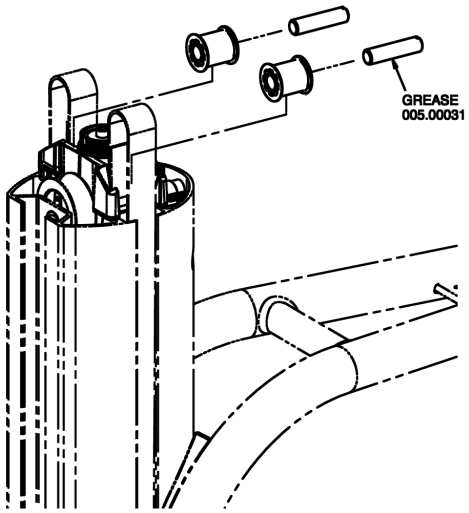
Fig.21

Service Procedures

Service Procedure 12

Replacing the Maxi Move Strap





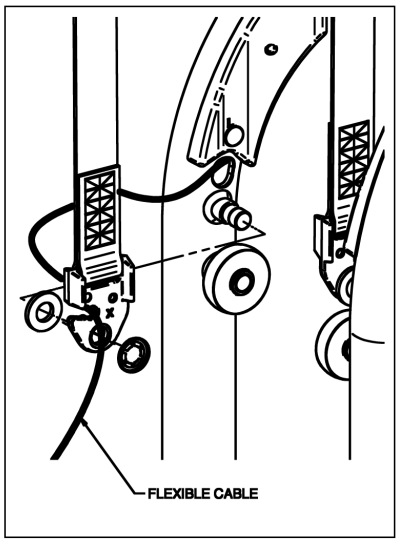


Fig.22

Strap removal

1) Lower the Maxi Move until the the lower limit switch is activated.

2) Remove the screw in the back of the cover cap. Pull out the emergency lowering pin.

3) Remove the top cap by lifting it from the front. Some force may be necessary to remove it.

4) Remove the wire protecting cap.

5) Cover the handles to protect them, and place the Maxi Move down on the floor.

6) Remove the strap roller and the pivot pin on both sides.

7) Carefully pull out the jib, in order to see the the strap attachment points on the jib. DO NOT PINCH THE FLEXIBLE WIRE. See Fig.23 and Fig.24 that show how to pass the wire in order to protect it.

Place loop of wire inside the extrusion

Fig.23

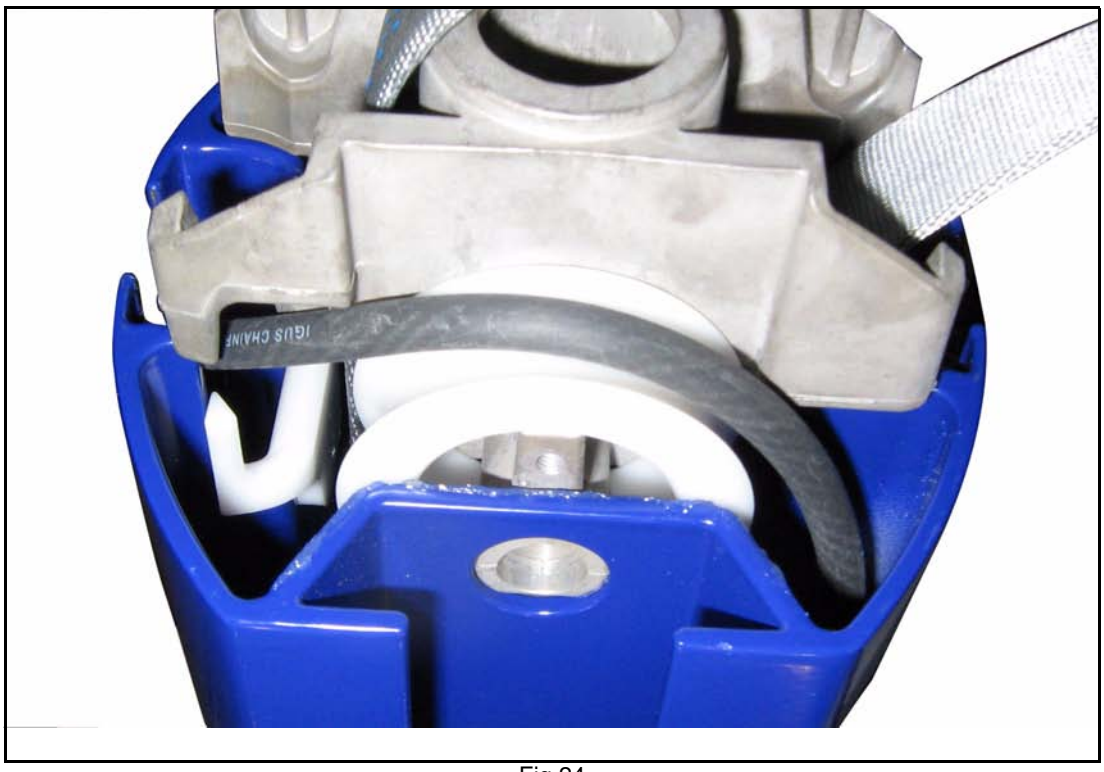


Fig.24

8) Remove the starlock washer on the jib pin. Remove the strap. For the strap with a wire clipped inside, carefully remove the wire from the clip.

9) Take the two new straps and compare strap lengths. ALWAYS PUT THE SHORTEST STRAP ON THE SIDE OF THE WIRE. Position the plastic washer, then the strap over the jib pin, and finally the starlock washer (use a box socket to fasten the starlock washer). The X on the strap clip must be facing toward the column.

Fig.25

10) Slowly turn the top of the actuator until you can see the strap pivot across the hole on the front of the column.

11) Insert a M4 screw inside the pin and carefully pull out the pin. It might be necessary to lift the spring wire in the inner casting to relieve some pressure on the pin.

12) Take the other end of the new strap and position it between the posts of the inner top casting. Push back the pin until it the spring wire clips into the groove on the pin.

13) Check the wear of the strap rollers. Replace them if needed. Grease the pivot pins and reinstall them with the roller. The pin must fit over the slot.

14) CAREFULLY lower the jib and guide the flexible wire to be sure it doesn't get pinched by the jib.

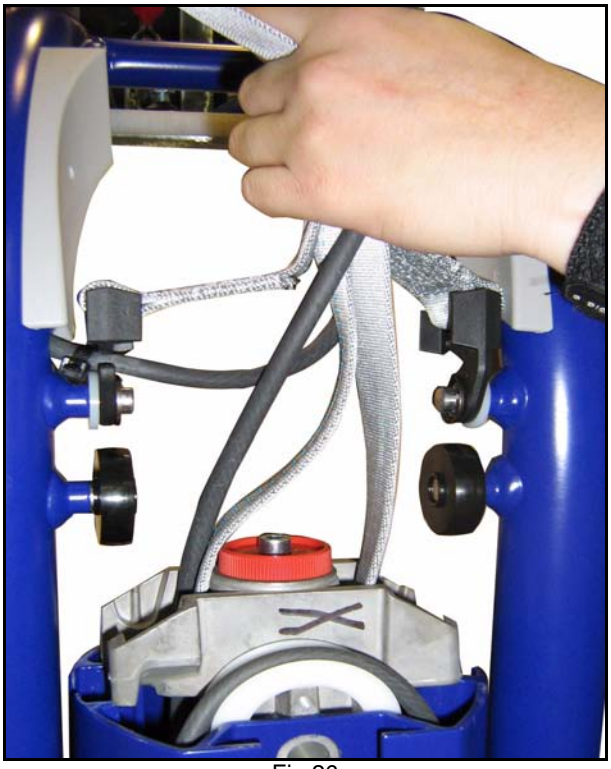


Fig.26

15) Reposition the lift on its 4 casters. Slowly raise the jib until your hear the 'clicking' noise of the limit switch. Release the jib slowly; the limit switch should disengage.

16) Raise and lower the column throughout its full stroke and check for any issues (noise, vibration, incorrect assembly).

Fig.27

Top Cover reassembly

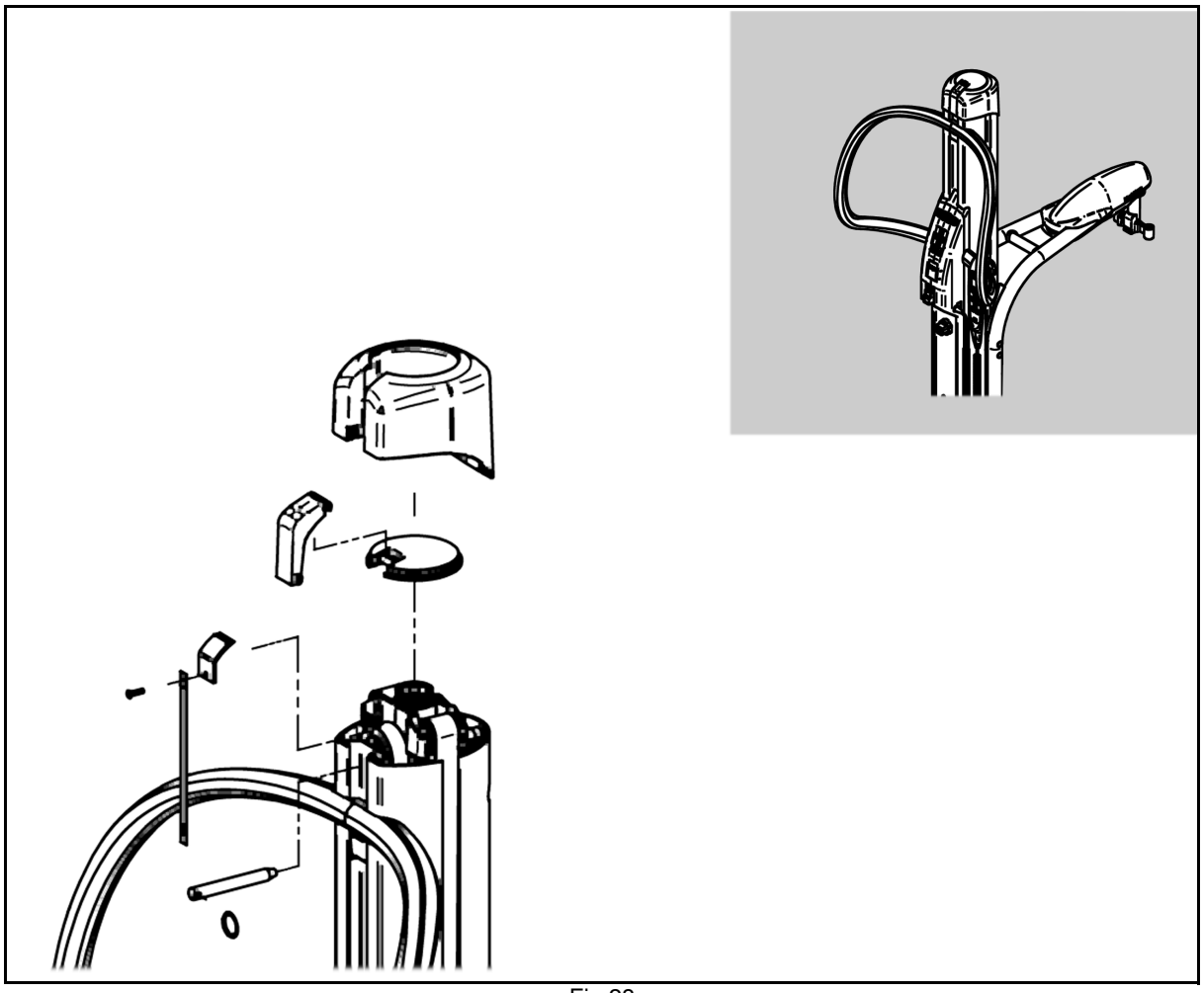


Fig.28

1) Turn the ribbed wheel at the top of the actuator to align the hole in the actuator with the hole in the top casting outer mast. Slide the pin inside the hole to keep it in position.

2) Position the emergency handle assembly over the ribbed wheel so the handle lines up with the back of the column. Temporarily remove the pin, replace the wire protector and slide the cover back in place. Replace the pin and check if the emergency handle sits properly inside the top cover. Secure the pin lanyard with the screw in the top cover. DO NOT over torque.

Fig.29

Fig.30

Verification

Once the cover is installed, raise and lower the column throughout its full stoke and check for any issues (noise, vibration, incorrect assembly).

Perform a safe working load test (see SP 5 [local requirement]) and check the up/down function of the column.

Service Procedure 13

Replacing the Mast Actuator

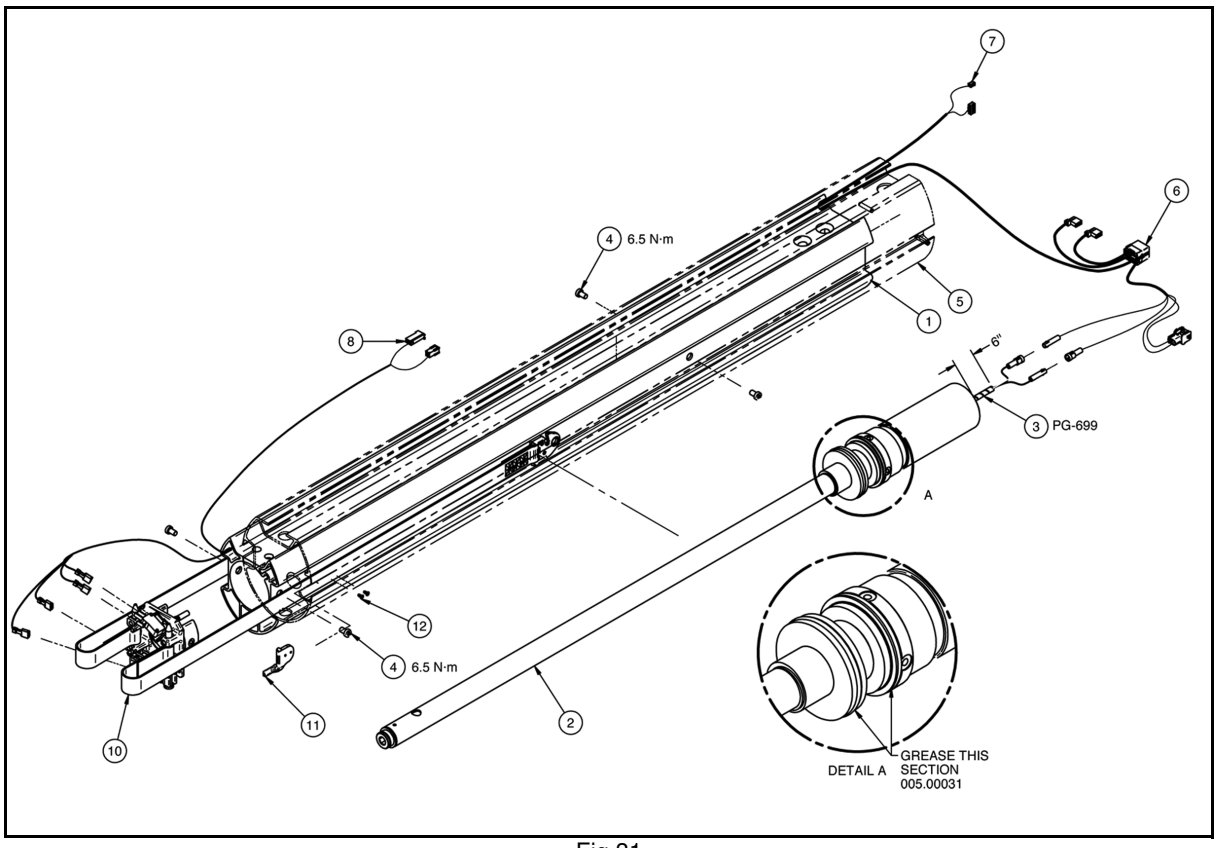


Fig.31

Removing the Mast

1) Raise the column enough to see the actuator screw head in the inner mast.

2) Remove the control box (see SP. 10) and the top plastic cap.

3) Remove the four screws that secure the battery bucket to the backplate and the two screws that holds the backplate to the chassis.

4) Raise the handle approx. 100 mm (4”) to get access to the mast’s two bolts.

5) Disconnect all the wires located at the bottom of the mast.

6) Remove the two bolts at the bottom of the mast. The bolts are held in with thread locker, so they might be hard to remove. Discard bolts once they’re removed.

7) Prepare an area to place the mast onto. Put back the emergency lowering pin. Lift the mast by holding the outer and inner masts. DO NOT RAISE IT BY THE JIB.

Removing the Actuator

1) Pull out the emergency lowering pin and remove the screw that holds the ribbed wheel in the actuator.

2) Remove the two screws that secure the actuator. These screws are held in with theadlocker, so be careful not to strip the heads.

3) Push on the actuator rod located near the top of the mast, and remove it.

4) Wrap the plastic over the actuator wire. Grease the top of the actuator and the two o-rings, and install plastic bearings on the top of the actuator.

5) Align the actuator wire with the channel of the inner mast. Slowly push the actuator to align it with the hole in the inner mast. Be sure that the top of the actuator fits into the hole in the top casting outer mast.

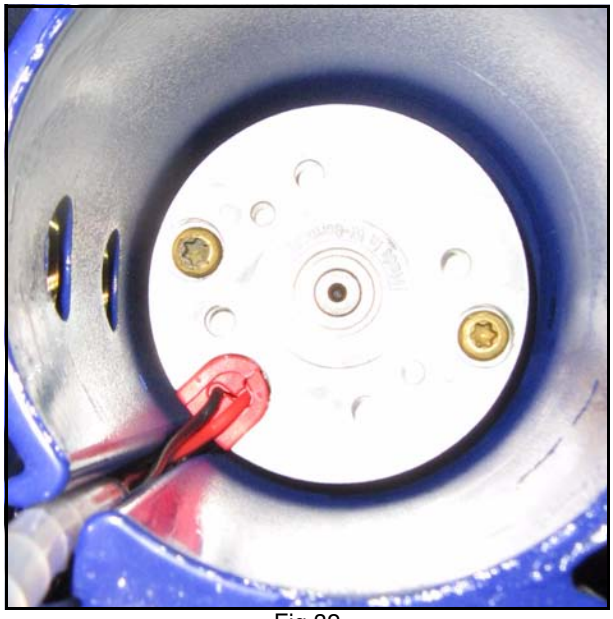


Fig.32

6) Use NEW screw to secure the actuator.

7) Replace the ribbed wheel at the top of the actuator and replace the screw. DO NOT over torque.

8) Reinstall top cover (see SP12)

Installing the Mast

1) Secure the wires on the column to make sure that no wires get pinched between the mast and the chassis.

2) Replace the mast over the chassis. Check wire positions before completely lowering the mast to the chassis.

3) Use NEW screws to attach the mast to the chassis.

4) Reconnect the wires at the bottom. Position wires inside the pocket of the chassis.

5) Lower the backplate and pass the wires behind the battery bucket and attach it to the backplate with the four screws. Then secure to the chassis with the two screws.

6) Reinstall the control box (see SP 10).

7) Perform a functional test (SP 4) followed by a safe working load (SWL) test (see SP 5 [local requirement]).

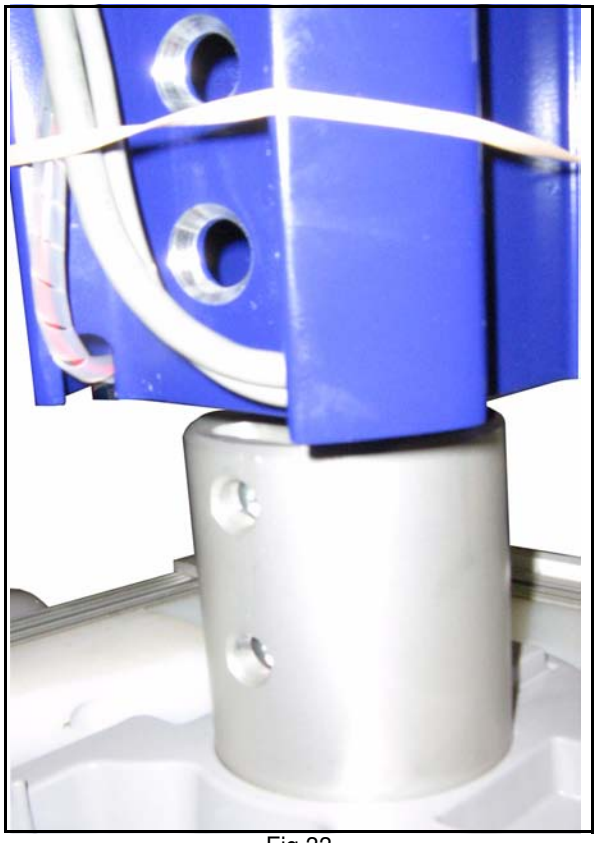


Fig.33

Service Procedure 14

Replacing/Adjusting the Handle

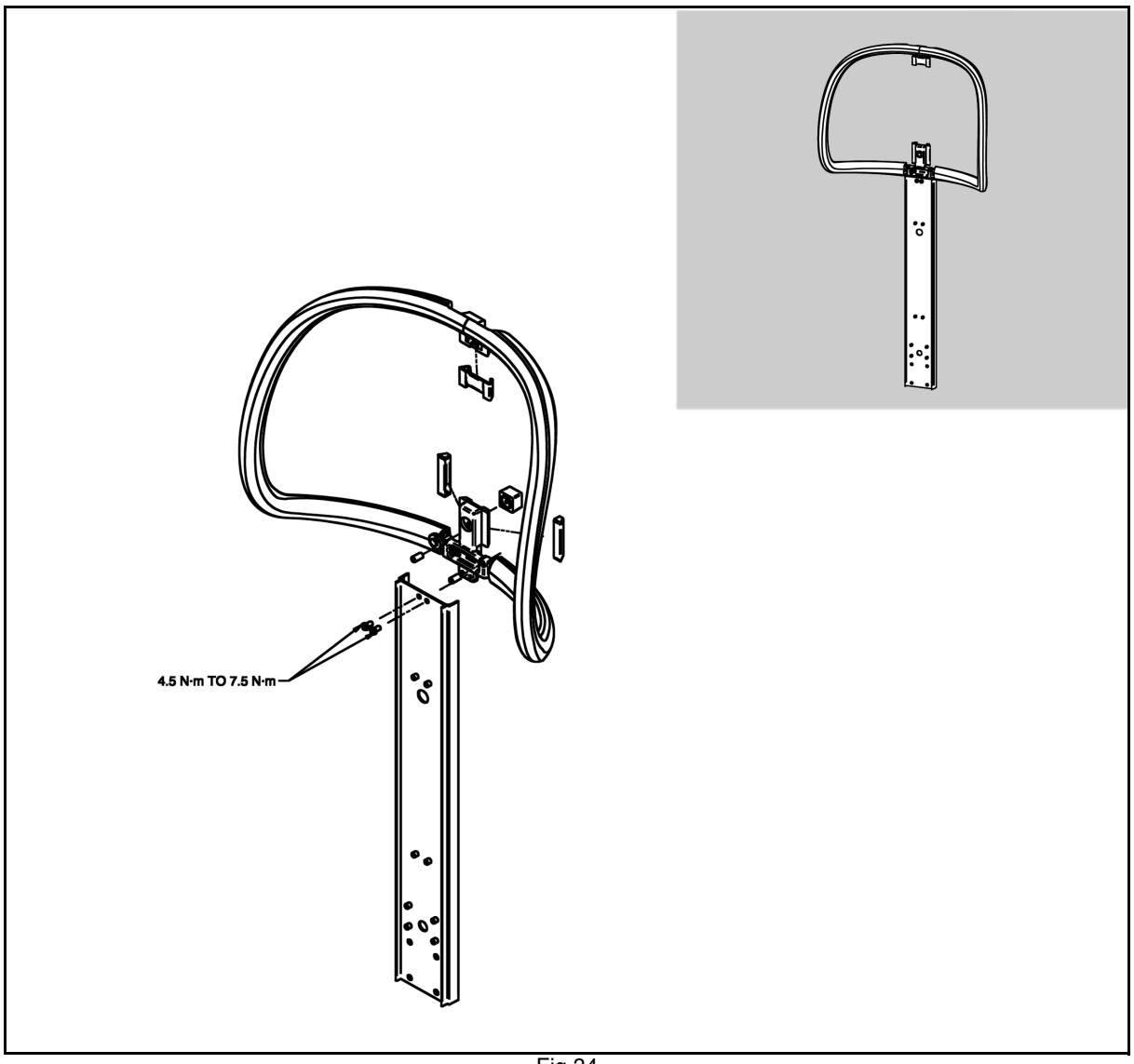


Fig.34

Removing the Handle

1) Lift the red emergency handle. Remove the screw that secures the red ribbon attached to the pin.

2) Remove the upper cap, the emergency handle assembly and the flexible cable protector (see SP 11).

3) Open the control box (see. SP 10).

4) Remove the two bolts that secure the handle to the control box back plate using a 4 mm Allen key.

5) Loosen the adjustable slider in the center of the handle and the two nylon setscrew sliders.

Slide the handle out from the top of the outer mast.

Replacement

NOTE: The replacement handle is supplied with all the sliders already attached.

1) Check the outer mast channel for any dents or kinks that may prevent the handle from sliding back in correctly.

2) Slide the new handle inside the channel of the outer mast.

3) Secure the handle to the control box backplate with the new bolt provided with the handle.

Adjustment

1) Tighten the central slider, then loosen it by 1/8 of a turn.

2) Adjust the two nylon setscrews to remove the play when twisting the handle. Apply Loctite 425 to the nylon nut before installing it (a silicone bead, like for the older version of Maxi Move, is an accepted substitute).

NOTE: DO NOT OVERTIGHTEN THE SLIDER NOR THE SET SCREW. This may prevent the outer mast from sliding.

3) Raise and lower the column and listen for any abnormal noises. If needed, loosen the setscrew to lower the pressure on the outer mast, but always check that the handle does not have too much free play.

4) Replace the control box cover and the top plastic cover.

5) Move the Maxi Move to validate that the handle free play is correct.

Service Procedure 15

Changing the Limit Switch

Anti-crush / Lower Limit

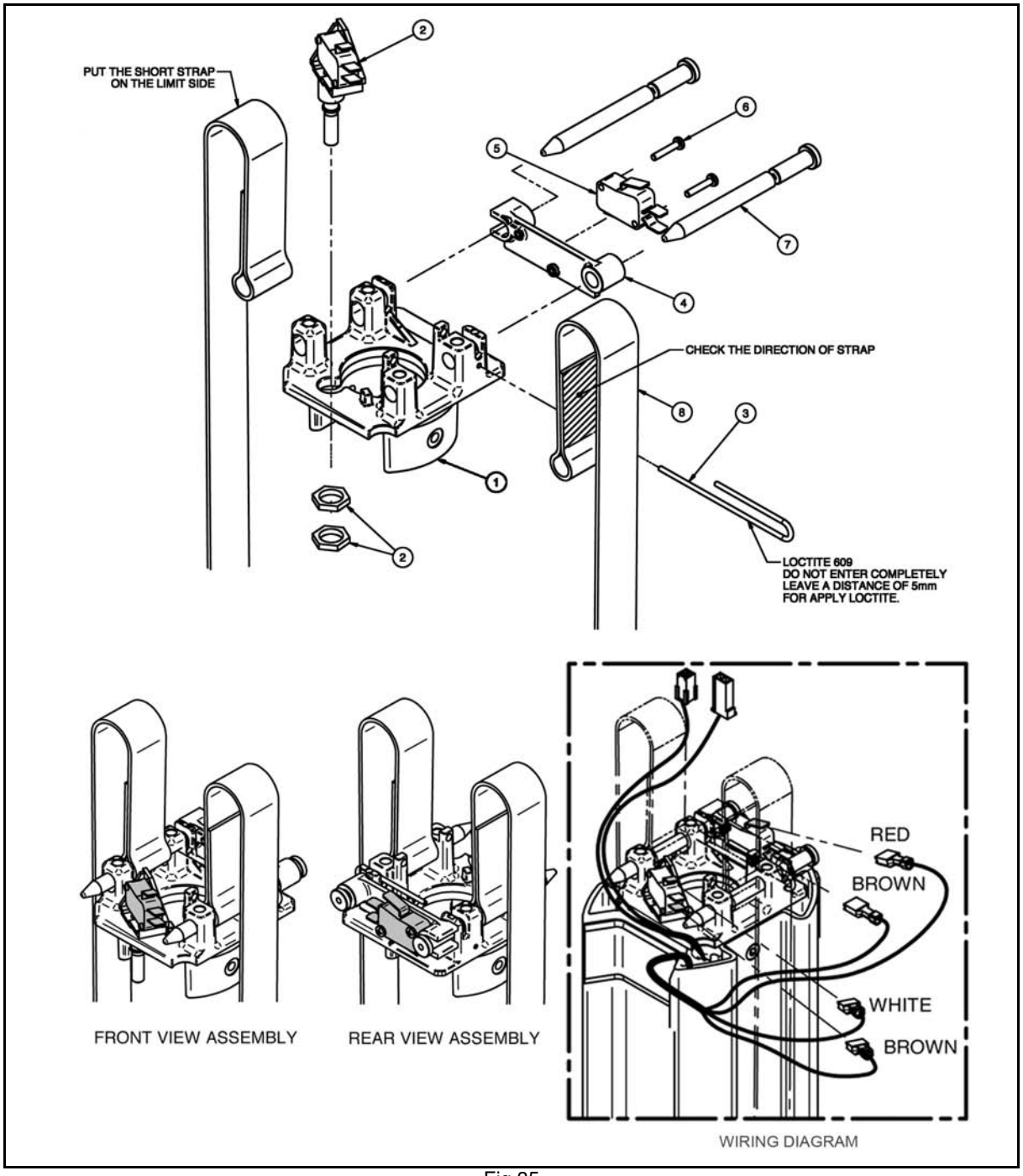


Fig.35

1) Lower the lift column completely with the handset.

2) Lift the red emergency handle. Remove the screw that holds the red ribbon attached to the pin

3) Remove the upper cap (see SP 11), the emergency handle assembly and the flexible cable protector.

4) Disconnect the wire of the limit switch

5) Remove the right pins that hold the straps (see SP 12)

6) Remove the switch mounting plate from the inside of the mast. Change the limits switch.

7) Replace the switch mounting plate and the strap pins (do not forget to pass the pin through the straps)

8) Connect the wire to the pin of the switch

NOTE: DO NOT PLACE THE EMERGENCY LOCKING PIN BEFORE DOING THE FOLLOWING TWO TESTS. This will prevent actuator breakage if the switch is not functioning properly.

9) Lower the mast with the handset. Hold the jib while lowering. The mast movement should stop.

10) Lower the mast completely. The movement should stop at the end.

11) Replace the top plastic cover as well as the emergency locking pin.

Upper limit

1) Remove the complete mast assembly (see SP 13 Mast Removal).

2) Remove the front bolt of the top casting outer Mast. Remove the strap roller and the roller pin. Pull out the top casting outer mast.

3) Gently push the inner mast upward so you can access the two bolts that hold the inner mast top casting. Be sure that the wires from the inner mast are able to move freely. Remove the top casting inner mast.

4) Remove the two plastic nuts that secure the limit switch. Disconnect the old switch and plug the connector on the new one. Place the new switch in the top casting inner mast. Tighten the two plastic nuts.

NOTE: The white plastic plunger must be in place in the switch.

5) Replace the top casting inner with the correct orientation. Use new bolts that have pre-applied adhesive.

6) Slide the inner mast back inside the outer mast. Be careful to place the sliders correctly if they fell out during the repair.

7) Put back the top casting outer mast with the cable roller and the strap roller. Be sure to position the flexible cable as illustrated in the pictures (see SP 12 regarding strap replacements). Put back the bolt in the front of the top casting.

8) Reinstall the top plastic cover (see SP 12 Top Cover Reassembly)

9) Reinstall the column over the chassis (see SP 13 Mast Installation.).

10) Raise the column to make sure that the upper limit switch stops the lift at the maximum reach.

Service Procedure 16

Slider Adjustment Replacement

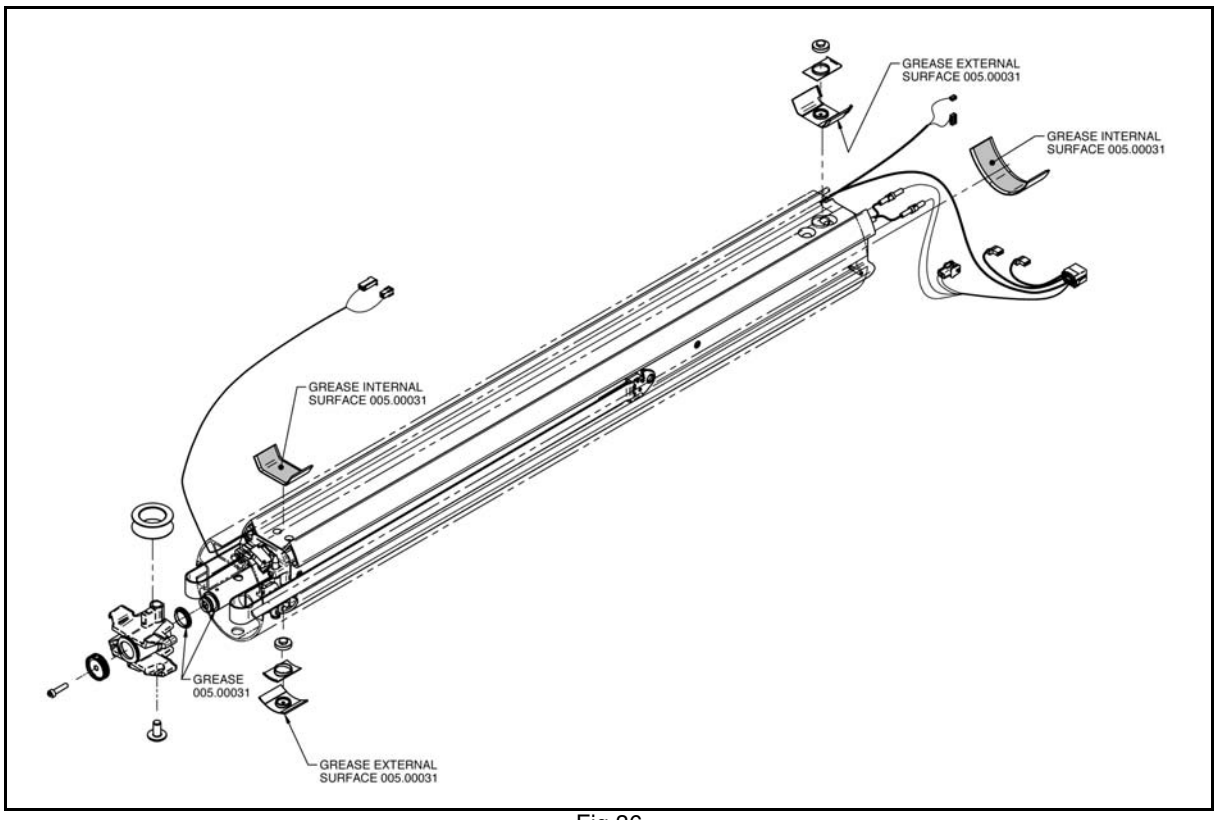


Fig.36

Four sliders are placed between the two extrusions to lower friction and to provide smooth movement. The two sliders that take the load (lower front and upper rear) are attached and held in hole in the extrusion. The other two sliders (lower rear and upper front) are mounted on an adjustable mechanism that is used to remove the gap between the columns.

Adjusting Sliders

Verify the free play between the two extrusions. Too much play may indicate that the sliders are worn or need adjustment. Check for any sign of grey powder residue or large scars on the mast that may indicate excessive wear on the sliders. Replace if needed.

Upper slider

1) Remove the top plastic cap.

NOTE: Use a 10 mm ratchet key, with a minimum of 5 degrees needed turn to activate the mechanism.

2) Slowly turn the adjustment screw clockwise to add pressure over the slider. Try to raise and lower the column during the adjustment to find the best adjustment. Too much pressure will restrict the mast's movement and too little will produce too much play between the columns. You should get between 5 to 10 kg to move the column.

3) Replace top cover.

Lower slide

1) Remove control box (see SP 10).

2) Raise the mast until you see the hexagonal head of the adjustment screw through the hole of the back plate.

3) Use a 10 mm socket to adjust the screw. Try to raise and lower the column during the adjustment to find the best adjustment. To much pressure will restrict the mast's movement and too little will produce too much play between the column. You should get between 5 to 10 kg to move the column.

4) Replace control box (see SP 10).

Replacing Sliders

1) Remove mast completely from the base and remove the top casting outer mast (See SP15 – Upper Limit)

2) Slowly push the inner mast upward. The inner mast must be approx. 50 mm (2") out of the top of the outer mast to access the slide. In this position, you can easily access the four sliders.

3) Apply grease to the surface of each slider.

4) Insert the two upper sliders in the inner mast. The adjustable screw must be set to minimum. Hold the two sliders with one hand and slowly push the inner mast until the sliders are approx 10 mm (3/8") engaged in the outer mast.

5) Go to the other end of the mast. Position two lower sliders and slowly draw the inner mast. You may need to lift the inner mast approx. 1 mm to pass over the slider. Once all the sliders are between the column they will not be able to fall. Adjust the sliders (see section adjustment).

6) Reinstall top plastic cover (see SP 12 Top Cover Reassembly)

7) Reinstall column over the chassis (see SP 13 Mast Iinstallation.).

8) Raise and lower the column at least 5 times to ensure that the adjustment is correct.

Service Procedure 17

Jib / Jib roller / Jib cover

Jib removal

1) See SP 12 - Strap removal for accessing the jib.

2) Remove the two screws under the jib cover. Push the clip on the top cover and lift to remove the upper cover.

3) Disconnect all the electric connections to the flexible cable that comes out of the jib tubing.

4) Gently pull out the flexible cable from the jib

5) Lift the jib completely out of the inner mast.

Jib Reinstallation

NOTE: The replacement jib will be shipped fully assembled (roller, guide block, pinch point removal cap).

1) Remove the dummy adaptor from the old jib and reinstall on the new one (See SP 18)

2) Slide the flexible cable through the opening on the right side of the jib. The use of a plastic strip or a fish tape can facilitate this operation. Connect the cable with the scale (if applicable) and the DPS power connector.

3) Reinstall the jib (see SP 12).

4) Perform a safe working load test. See SP 5 (local requirement).

5) Do a functional test (SP 4).

Jib roller change

1) See SP 12 - Strap removal for accessing the jib, but do not disconnect the strap.

2) Lift the jib just enough to get access to the four rollers.

3) Change the four jib rollers. Apply grease to the stud before putting the new roller in place. Be sure to push the roller completely to the end of the pins (you should feel a ‘clicking’ effect).

4) Pull back the jib in place, but carefully place the flexible cable to not pinch it.

5) Replace the strap roller and the plastic cover.

Changing the Jib Top Cover

Remove the two screws under the jib cover. Push the clip on the top cover and lift to remove the upper cover. Replace the cover and the screws. DO NOT overtighten screws.

Changing the Jib Bottom Cover (Non-Scale units or Non-European Scales)

1) Remove the upper cover. Remove the five plastic screws that secure the bottom cover.

2) Disconnect the load cell. Remove the two retaining nuts of the load cell as well as the two retaining bolts.

3) Slide the bottom cover out by passing the hole over the load cell. Place the new cover the opposite way.

4) Replace the two bolts and the two nuts that secures the load cell.

5) Reinstall the five screws that fasten the cover to the jib plate.

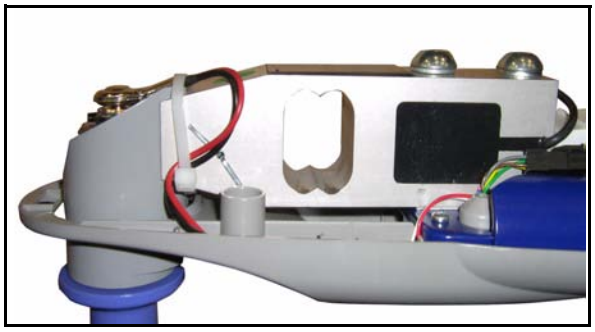


Fig.37

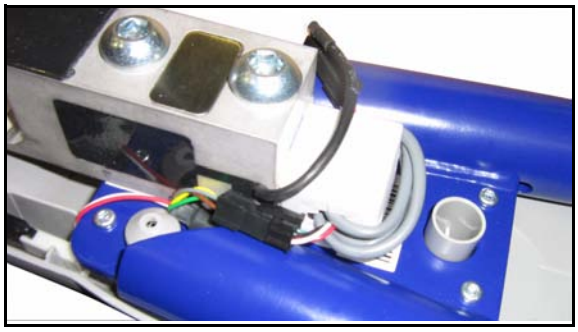


Fig.38

Changing the Jib Bottom Cover (European Scales)

NOTE: This method is used with units fit with European scales to prevent the scales from recalibrating unnecessarily.

1) Remove the two screws under the jib cover. Push the clip on the top cover and lift to remove the upper cover. Replace the cover and the screws. DO NOT overtighten screws.

2) Remove T-Bar (see SP 18 under T-Bar Removal).

3) Remove the old cover and replace with new one.

4) Reinstall the T-Bar (see SP 18 under T-Bar Installation)

Service Procedure 18

Combi Attachment

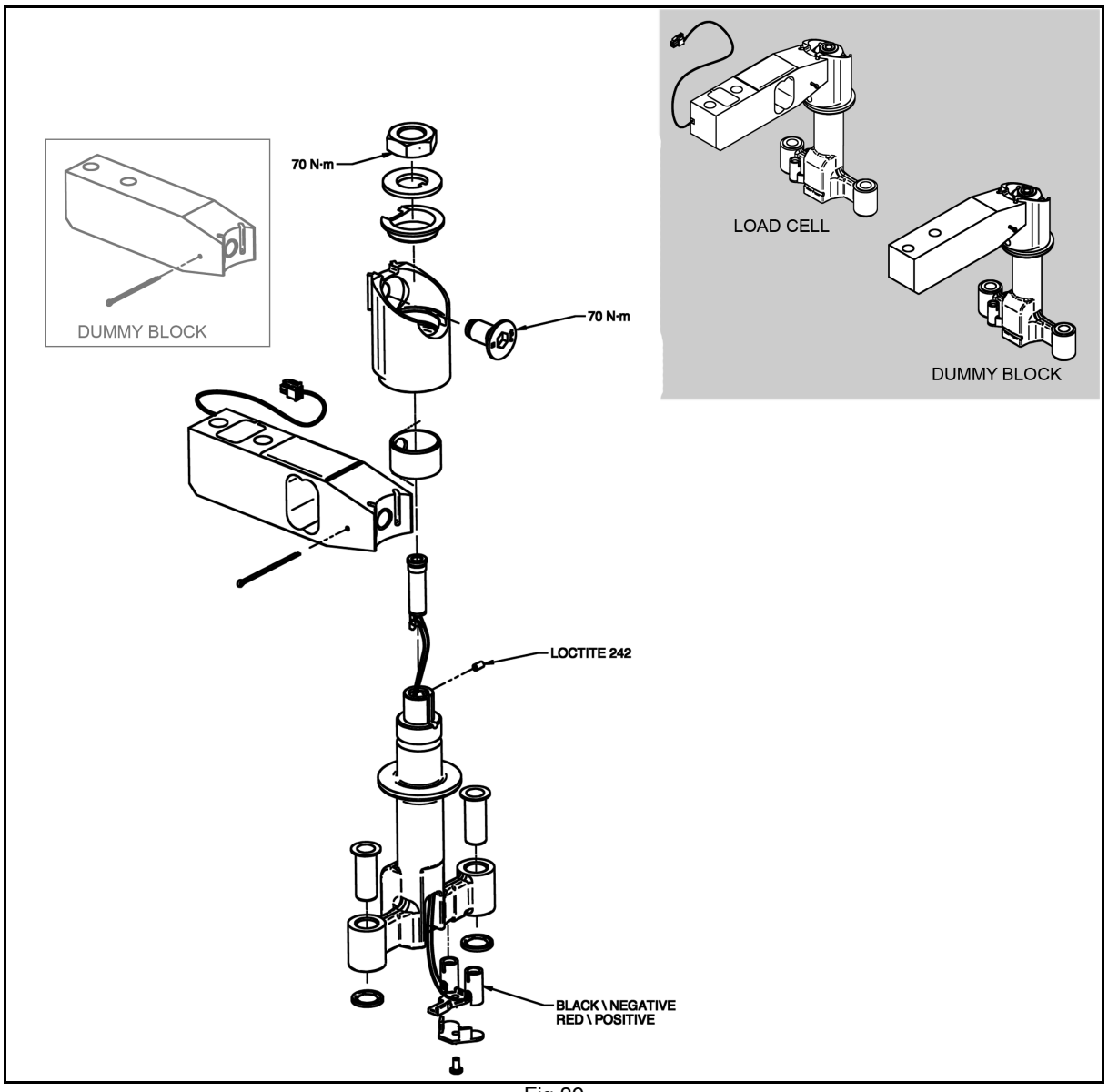


Fig.39

Inspection

1) Remove the jib top cover. Use a 30 mm socket to check the torque on the M20 nut that retains the lift support unit.

2) Check that a force between 2 and 3 kg is required to rotate the spreader bar in either direction. If needed, adjust the M8 setscrew behind the combi adaptor to reach the required force.

3) Rotate the T-bar and verify that the washer is well seated on the bushing. A row of balls inside the combi adaptor prevents the T-Bar from falling in case of any failure of the bushing or the nut. If there is a gap between the washer and the bushing, change the bushing or the nut.

4) Check that the jack-plug is securely connected inside the connector in the T-Bar. Rotate the T-Bar while powering the DPS to check that the current is passing in each position.

T-Bar removal

1) Remove the jib to cover.

2) Disconnect the jack-plug for the T-Bar

3) Remove the T-Bar's 4 mm setscrew as well as the M20 nut.

4) Remove the friction adjustment's 10 mm (3/8") setscrew, the spring and the nylon block.

5) Remove the battery and place the Maxi Move on its back.

6) Remove the 6 mm (1/4") setscrew on the combi adaptor and rotate the T-Bar to remove the five ball bearing balls within the T-Bar. This operation is easier if the bottom cover has been removed.

NOTE: It is impossible to remove the T-Bar unless ALL the balls bearings are extracted.

T-Bar installation

1) Reposition the Maxi Move into the upright position.

2) Take the new T-Bar (the bushing and the electric connector are already assembled) and slide it inside the combi adaptor.

3) Replace the five ball bearing inside the combi adaptor and put back the setscrew (apply loctite on the setscrew before replacing it).

4) Place the washer over the T-Bar. Use a new M20 nut to fix the T-bar. Then place the new 4 mm (3/16") setscrew to secure the electric connector.

5) Place the nylon plug, the spring and the 10 mm (3/8") setscrew inside the combi adaptor. Adjust the friction so a force between 2 and 3 kg is needed to rotate the spreader bar. Apply Loctite to the screw

6) Plus the electric connector. Rotate the T-Bar while powering the DPS a check that the current is passing in each position.

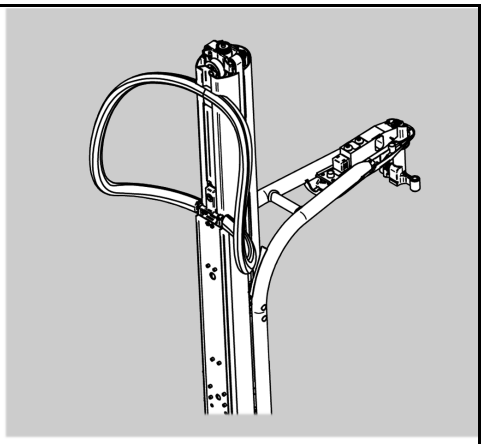
7) Reinstall the top cover.

8) Perform a safe working load test if it is a new T-bar that is being installed. See SP 5 (local requirement).

Service Procedure 19

Scale Removal/Installation

NOTE: When changing the scale, use the FULLY ASSEMBLED scale repair kit, which includes the T-bar fully assembled at the factory.



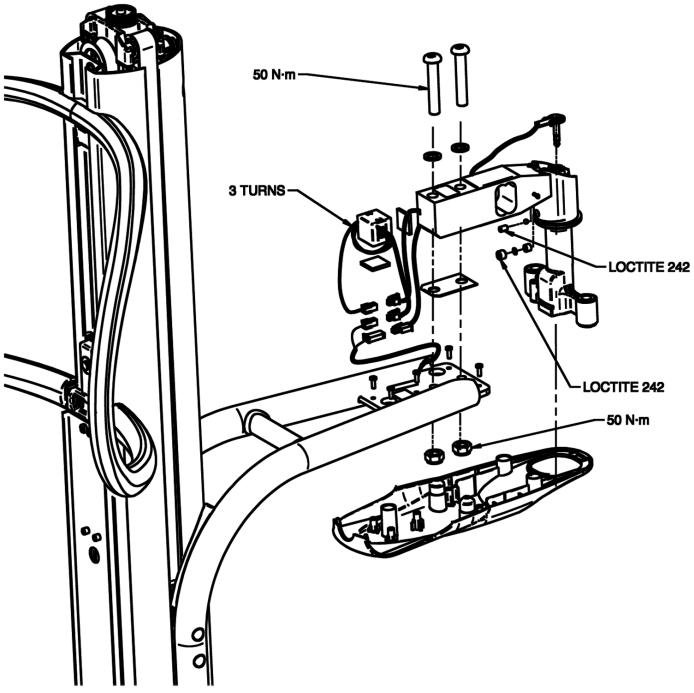


Fig.40

Service Procedures

Removing the Scale

1) Remove the upper cover. Remove the five plastic screws that fasten the bottom cover.

2) Disconnect the load cell. Remove the two retaining nuts from the load cell and the two retaining bolts. DO NOT REMOVE THE TAPER SHIM ON THE JIB PLATE. The shims are critical to the angle of adjustment of the scale.

3) Slide out the bottom cover by passing the opening over the load cell.

Installing the Scale

1) Take the scale assembly kit and slide the bottom cover from the back of the load cell.

2) Place the scale over the jib plate and the taper shim.

3) Replace the two bolts, the two washers and the two nuts that secure the load cell.

4) With a digital level, check the angle of the scale. It must be between 2.2 and 2.6 degrees, pointing upward. If the inclination is out of range, use the taper shim provided with the kit to set the scale at the correct angle (each shim adds/removes 0.5 degrees).

5) Connect the scale. Turn on the Maxi Move. The scale display must illuminate and show "0.0".

6) Reinstall the load cell and the upper cover.

7) Reinstall the five screws of the bottom cover. Ensure that the cable is replaced correctly (see SP 17).

8) Check if the scale display is still showing "0.0". If it does not, check the cable installation again.

9) Check the scale's calibration. See SP 6

NOTE: For any new scale installation in the European market, it is necessary to recalibrate the scale and to have it verified and approved by an approved organization.

Service Procedure 20

Combi Spreader Bars

1) Visually check the jib for damage and defects to the paint work and the welded joints. Make sure that the end plugs are installed. Recommend replacement of any defective parts.

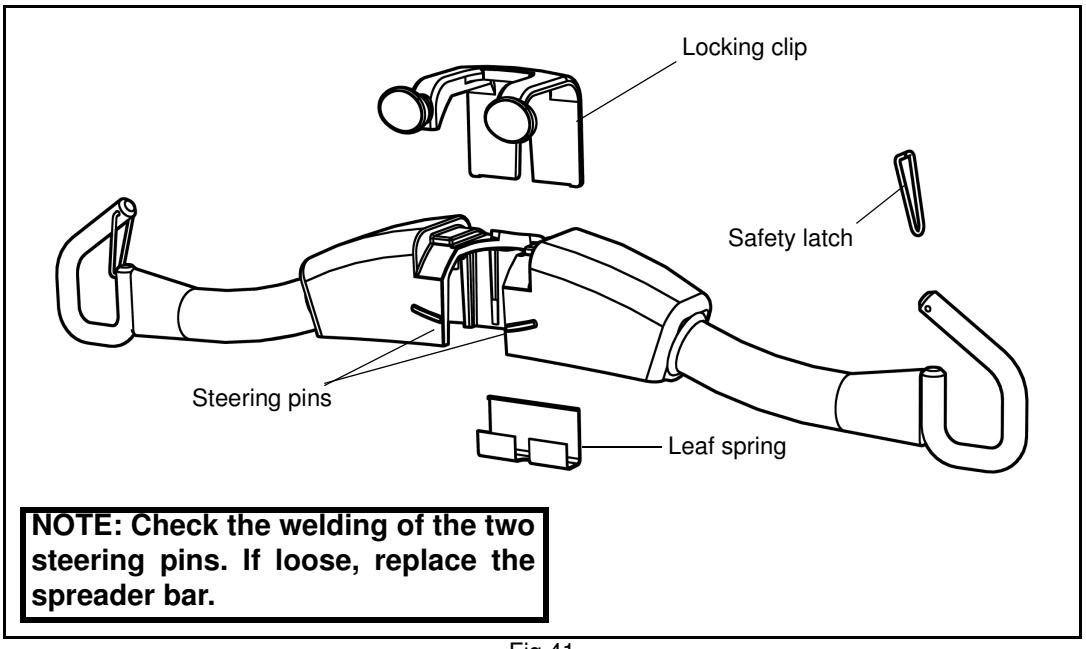

Locking clip
Safety latch
Steering pins
Leaf spring
NOTE: Check the welding of the two steering pins. If loose, replace the spreader bar.

Fig.41

2) If fitted with a combi system (see picture below) operate the locking clip and remove the attachment from the T bar.

3) Visually check the condition of the following combi attachments paint work, welds, hooks, locking clip, steering pins and sling retaining clips. Recommend replacement of any damaged or defective parts:

- Walking Jacket Small (2 Hook)
- Loop Small (2 Hook)
- Loop Medium (2 Hook)
- Loop Large (4 Hook)
- 4 Point DPS
- 4 Point Powered DPS

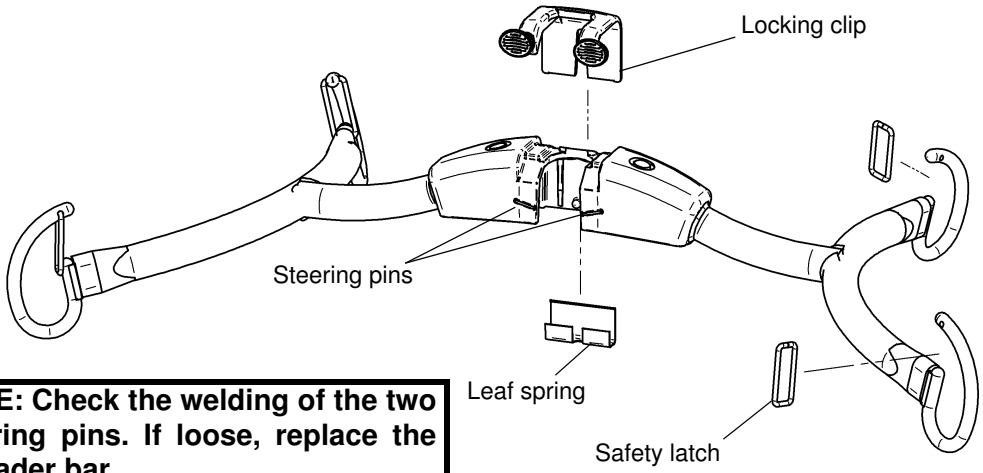
Stretcher

1) Make sure that the operation of the locking bolt is smooth and precise when in the locked position.

2) Check the welding of the two steering pins. If loose replace the hanger bar.

Four-Point DPS Pivot Point

Visually check the condition of the two bushings in the T-bar. Replace if necessary.



NOTE: Check the welding of the two steering pins. If loose, replace the spreader bar.

Fig.42

Four Point DPS (Combi)

1) Visually check the welds around the lifting lugs for cracks or any sign of deterioration.
2) Check the condition of the hand grip recommend replacement if necessary.
3) Secure the new hand grip in accordance with the manufacturers instructions.
4) Refer to Figure above. Remove the two caps, two M10 Nyloc nuts, two washers
5) and two disc spring washers.
6) Refer to Figure Special Tool ST252 below. Use the Special Tool, wind the legs inwards and lift the frame over the studs.
7) Refer to Figure above. Visually check the condition of the two friction washers and replace with new if cracked or contaminated.
8) Refer to Figure above. Re-assemble the lift frame to the lift support as shown use Loctite on the studs of the lift support before installing the two M10 nyloc nuts.
9) Tighten one of the M10 nyloc nuts initially to 2.72kg (6 lbs) load and check using the load cell: refer to Figure Load Cell below. Tighten the remaining M10 Nyloc nut until a total load of 5.44kg (12 lbs) is indicated on the Load Cell.
10) Check pivot pin, if loose replace hanger bar.

(Special Tool ST252 Load Cell)

Four-Point Powered DPS Spreader Bar

NOTE: The powered DPS pivot point configuration is the same as the non powered with the exception of a powered actuator and the friction washers being manufactured from nylon.

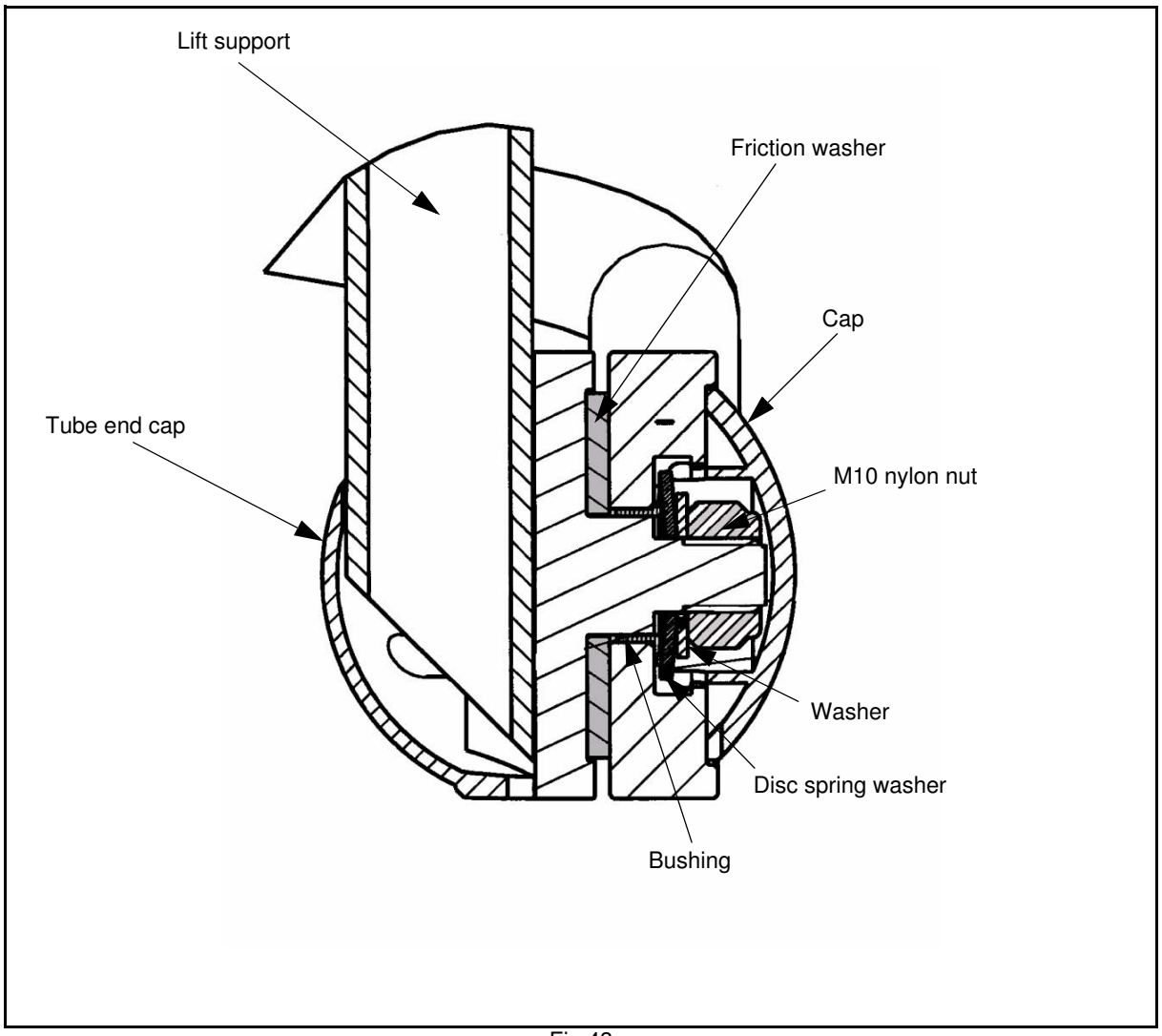


Fig.43

Service Procedures

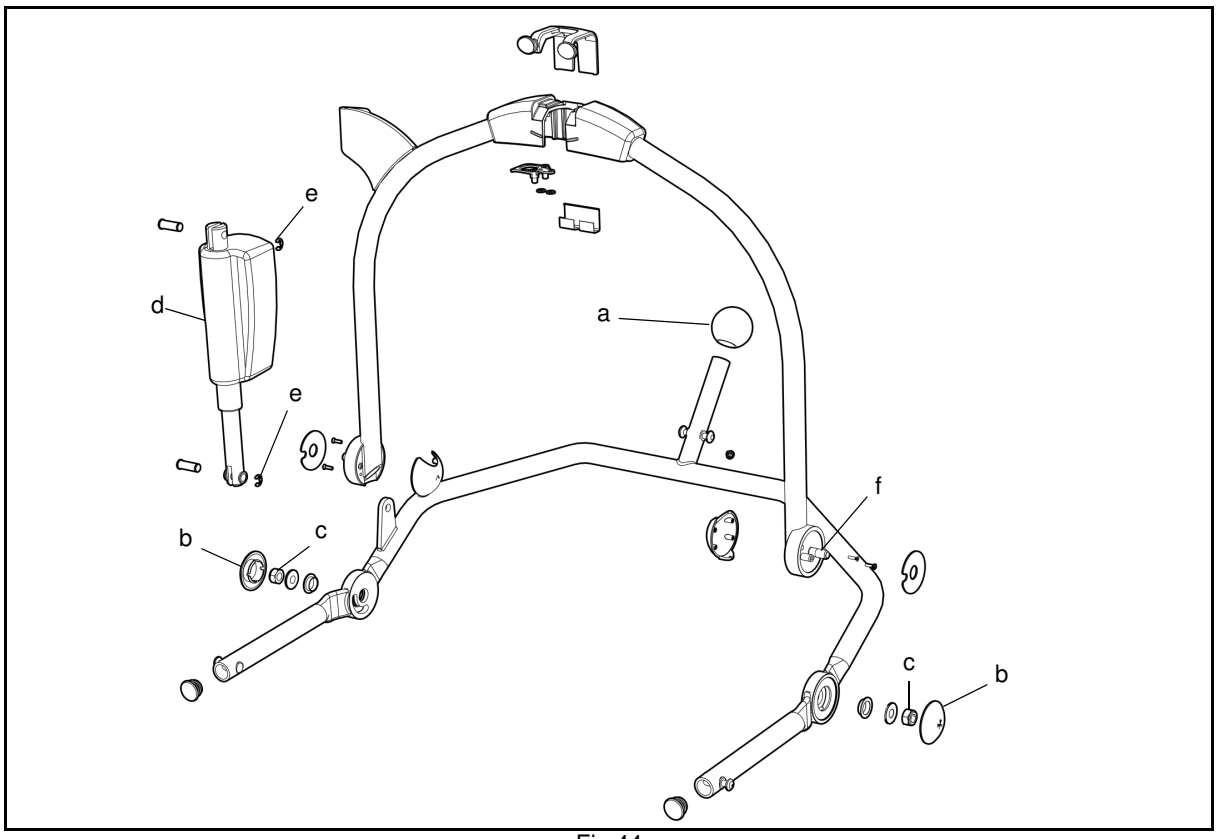


Fig.44

1) Check the condition of the hand grip knob (a) recommend replacement if necessary. Secure the new hand grip knob in accordance with the manufacturers instructions.
2) Remove the two caps (b) from the pivot points and use a 17 mm socket to check the torque on the two M10 nyloc nuts (c).
3) Replace the two caps (b).
4) (Combi) Visually check the condition of the T-bar electrical contacts. Look for signs of corrosion or wear. Clean or replace as necessary.
5) Visually check the condition of the actuator (d) look for any signs of damage to the piston rod and the casing: if necessary recommend replacement.
6) Check that the top and bottom ‘E’ clips (e) are installed these are used to retain the actuator to the lift frame and spreader bar.
7) Visually check the welds around the lifting lugs for cracks or any sign of deterioration. Check the two pivot pins by hand for movement or unwinding (f)

Service Procedures

Sling Checks

- Visually check all slings presented with the hoist:
  - Visually check the stitching, seams and the fabric must be in good condition.
  - Visually check the condition of all plastic support clips, look for cracks on the cold shut line and any deformation that would be attributed to incorrect laundry processes.
  - The procedure detailed in the text that follows only applies to the plastic clips on ARJO manufactured slings.

Sling Clip Gauge ST331 Band SIDC2000

  - Refer to the above illustration and insert the machined diameter of the Sling Clip Gauge ST331 into the large diameter of the keyhole slot in the plastic clip.
  - Allow the weight of the gauge to rest against the sling clip and attempt to pass the gauge pin through the slot into the smaller diameter. Do not force the gauge through the slot.
  - The gauge must not pass through the narrow (mouth) section of the plastic sling clip. If the gauge does pass through the slot the sling clip is defective:
    - Attach one of the "DEFECTIVE - DO NOT USE" bands , *Part No. SIDC2000*, securely to the sling. Sign and date the band with a indelible marker pen. (**NOTE *This is a UK band. It can be ordered outside UK as an example and should to be changed to a country specific layout***)
    - Record the identity serial number from the DO NOT USE band on your service report sheet and make a note of the failure.
    - Use the indelible marker pen to discreetly write the identity serial number from the DO NOT USE band in a corner of the sling.
    - Inform the customer of your findings and the actions taken and advise that the sling be withdrawn from service and replaced with a new or serviceable sling.

      NOTE: The use of this gauge is the only approved method of checking the serviceability of the ARJO plastic sling clip and no other method should be used.
  - Check that the Safe Working Load (SWL) label is legible if necessary mark the SWL with an indelible marker pen.
  - If in doubt about the condition of the sling recommend that the sling should be removed from service.
  - If satisfied with the condition of the sling identify in accordance with one of the following:
    - Slings that have a serial number label should be signed and dated with an indelible pen and the information recorded on the Service Report paperwork.

    OR
    - Slings without a serial number label mark the date and Engineers number discreetly in a corner of the sling with an indelible marker pen.

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